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This booklet contains brief descriptions of educational experiments being conducted by researchers on various campuses of the University of California. The research is being conducted in public schools near each campus, with both private and public funds. (EF)

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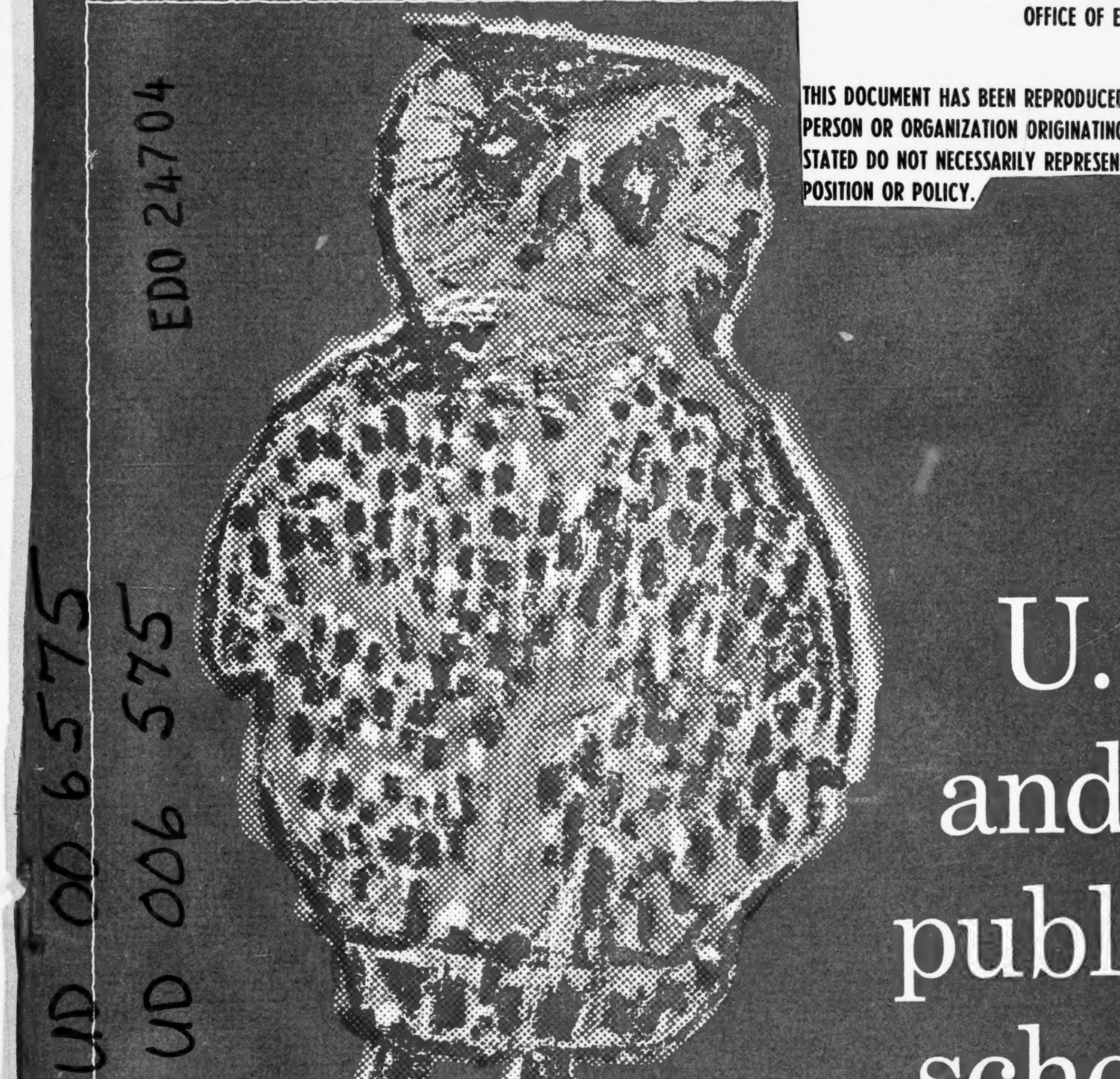


U.C.
and the
public
schools

Foreword

"Can schools be good enough for our kind of world?"

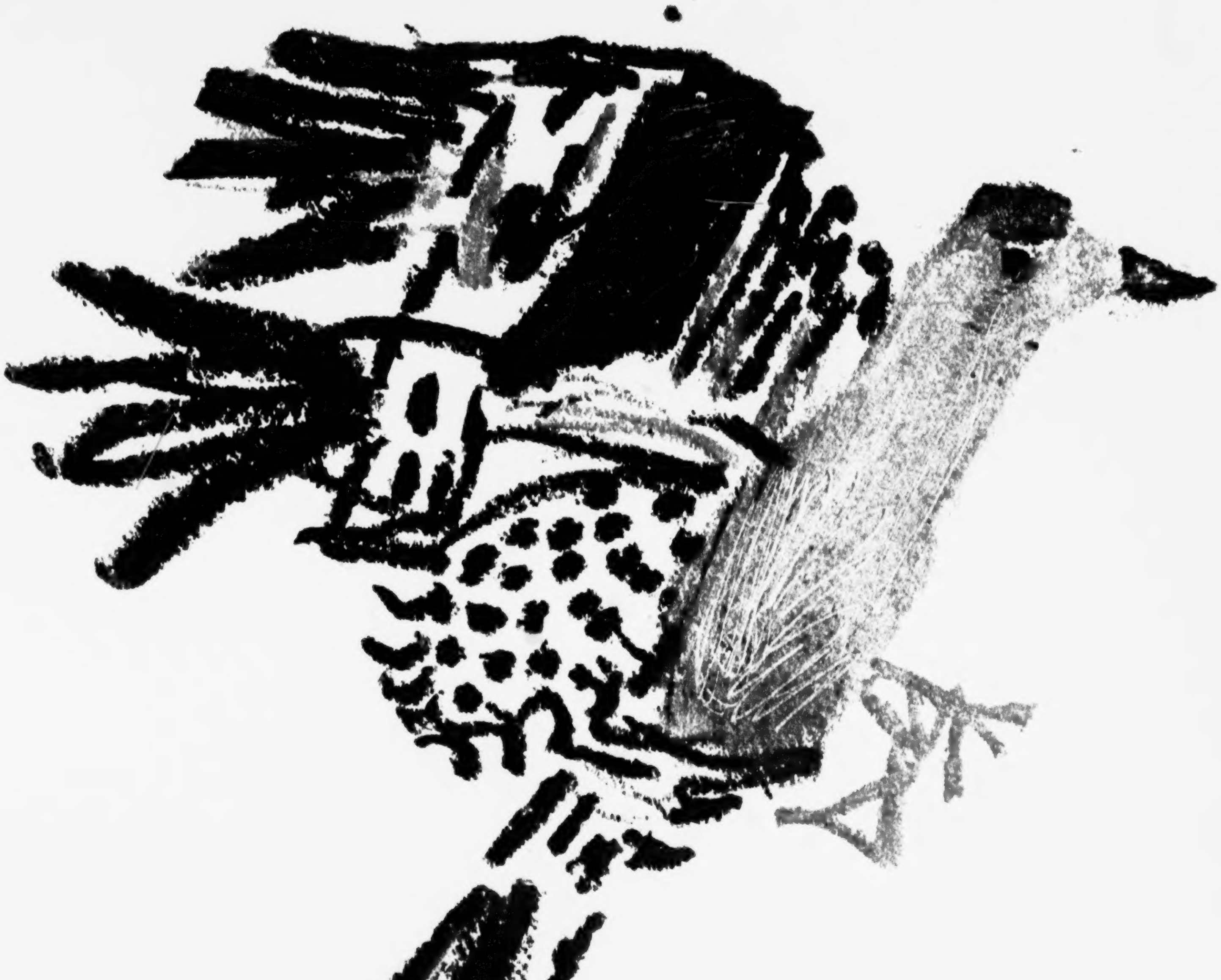
U. C. students around a seminar table ponder the professor's question, considering the revolution in the American environment wrought by the auto, the airplane, radio and t.v., wonder drugs, supermarkets, computers, nuclear power, space ships.

The professor—S. E. Torsten Lund, assistant dean of the School of Education at Berkeley—has seen all these changes in his own lifetime. He thinks "still more radical changes are going to overtake my grandchildren before they become grandparents themselves."

"How does a society prepare its people not only to accept but to control so much change?" Lund continues. "Americans seem to assume education is the answer. But this is a critically new kind of assignment for American schools. Always before their job has been to get each new generation ready to take part in established, familiar ways of living, working and governing. Now schools are supposed to lead our children to take the reins in a revolutionized and revolutionary world, with poise, mastery and humanity, and holding fast to essential American values. Can schools become good enough for this?"

"The schools of the future will inherit much from the past," says U. S. Commissioner of Education Harold Howe II, "but they should question all past practice before adopting any of it."

What the schools inherit and cherish, what they question, what they change, are questions engaging thousands of University of California professors, researchers, students, and University Extension, on several campuses. Their work with leaders, teachers and pupils of the public schools up and down the state has brought the University into closer touch with the schools. This booklet reports some examples of this working partnership.



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Invention

Two new winds have swept the nation since the end of World War II, and they've blown the roof right off America's beloved—but shabby and outgrown—little red schoolhouse.

These new winds are the knowledge explosion and the civil rights revolution.

Neither teachers, principals, district superintendents, school board members, parents, taxpayers, nor education professors at the University know exactly how the schoolhouse should be rebuilt. But several experimental models are being designed and tested at the University.

UCLA's UES

In 1882, when the Training School of the Los Angeles Normal School opened, the modern thing in education was grading. Any subject thought to be essential in formal education was spooned out in roughly equal portions, and served up one year—one grade—at a time to children of the same age. Graded lessons, textbooks and teachers were assumed to fit any child of that specified grade.

The Normal School was merged into UCLA, and its Training School evolved from a demonstration school for student teachers into a laboratory in 1960. This "center for inquiry, experimentation, innovation, and research in education" is called the University Elementary School.

UCLA researchers from as many as 20 other departments besides the School of Education work in this laboratory with UES teachers. Among many studies there are investigations of children's higher mental processes, motor abilities, perceptions; tests of new curriculums and instructional methods.

But the main experiment is the whole school itself, which refutes the principles on which the old Training School—and our present public school system—were founded. UES with its 400 pupils from three to twelve years old now is a working model of a nongraded school.

John Goodlad, new dean of the School of Education, who is an originator of "nongrading," sees UES not as a search for a better graded system, but as a test of an entirely different way, "built on differing assumptions, arousing differing expectations of pupils, and demanding differing teacher behavior."

UES assumes that children are more different from each other than present school organization allows for, and that they keep on being different as they grow. Says Goodlad, "Children are downright ornery; they refuse to grow up all of a piece." Elementary schools thus must be able to continually diagnose each child's individual state of learning and prescribe a range of alternatives for him.

UES Principal Madeline Hunter describes this diagnosis and prescription process: "What kind of boy is Johnny? To what teaching style does he respond most fruitfully? When he is with a certain group of children is he a leader or a follower? What kind of group might improve his position? What are his educational strengths and weaknesses? At what point does his knowledge leave off and his learning need to begin?"

UES does not expect the pupil to learn what other children his age are learning. "Is this child ready for school? (or third grade or fifth grade?)" is not the question. It's "What is this child ready for?"

Sound learning is cumulative—one learning builds on another. Thus, the pupil should start a new course or subject or concept whenever he has mastered —not "barely passed"—what has gone before. His sense of school success should arise from this mastery, not from comparison with other children his age.

This kind of learning requires a reorganized teaching. At UES children are placed in "clusters," changed each year. They may contain 25 children, or 75. They may be taught by one teacher or a team of full-time, part-time, specialist and intern teachers. Each cluster contains children of varying ages and may keep a child as long as three years (during which he may gain by being both the youngest and the oldest in his group).

The cluster is designed to focus teachers' attention on the individuality of children and to provide flexibility in teaching styles so that teachers can respond to differences. The clusters are so varied in size, ages, personalities, teaching styles, and curriculums that UES can prescribe for each pupil from several alternative learning situations—not just one grade in which he is pegged because of his age or achievement.

UES also provides many alternatives for the teacher: single class teaching, subject specialization, working with a team in lesson-planning, evaluating and grouping pupils. Perhaps the most difficult new task is diagnosing and prescribing the learning group, teaching strategy and course of study for each pupil.

As research and demonstration teachers, UES staff interpret their work to thousands of visiting teachers and school personnel every year. They also experiment in the training of teacher candidates from UCLA's School of Education.

Can UES's new organizational schemes, teaching styles, and advanced curriculums be moved out of the laboratory into the more rigorous natural environments of public schools? A new League of Cooperating Schools links UCLA and UES with 20 public elementary and intermediate schools from San Diego to Delano. The cooperating schools are of all varieties—old-fashioned and *avant-garde, de facto* segregated and integrated, suburban and "inner-city," rich and poor. The Kettering Foundation supports the project through its Institute for Development of Educational Activities (IDEA). A board of control made up of all the school districts and the School of Education selects the League's research and development projects, and individual schools decide which programs they will try. They may range from reorganizing into nongraded schools to field-testing new curriculums.

Berkeley's Laboratory Schools

The Berkeley campus' educational laboratory program is placed in three public elementary schools in "inner-city" neighborhoods of the city of Berkeley.

Under an agreement with the Berkeley school board the School of Education has a voice in the selection of the principals and master teachers of the laboratory schools. The school populations are the normal enrollments for those neighborhoods. The lab schools' formal purpose is to provide research and field-testing facilities for University researchers and to provide demonstration and practice teaching for student teachers.

But to Lloyd F. Scott, professor of education who is laboratory schools coordinator, their main significance is that they show how—and how much—new ideas may be able to change the traditional neighborhood school. Ironically enough, this neighborhood school, which has often shown itself to be resistant to change, is the institution most relied upon now to cope with the major changes in American society.

Berkeley's Columbus, Washington, and Whittier laboratory schools are neighborhood schools which are overcoming resistance to change, Scott believes. He recruits for them the best available leadership—principals committed to new ideas. They choose a core of master teachers who set the tenor of the schools' teaching—a tone which Herbert Wong, principal at Washington, describes as a blend of "high professionalism, openness toward new ideas, warmth, sharing of experience, free expression."

Laboratory schools are not bound to the same course of study as the rest of the school district. Washington is nationally known for experimentation with new science curriculums. It emphasizes the pupil's creative expression in the process of learning and uses popular arts such as jazz and painting in teaching and in establishing a close relationship with its neighborhood.

Columbus and Whittier are reorganizing to become nongraded schools. Teachers themselves are re-evaluating all their curriculums, materials and methods. "There is no magic in simply removing grade levels," says Whittier Principal John Matlin, "if there is no change in the teaching practices, in what is expected of the child and in what happens to the child."

In 1966 Columbus teachers spent the summer on a U. S. Office of Education project writing their own beginning reading curriculum because they had found that no one commercial program provided enough materials to deal with the great variety in their pupils' ability to listen, to think complexly and abstractly, and to use the structure of language in learning to read. (Columbus serves a low-income, largely Negro neighborhood in the Berkeley "flatland.")

They named their program "Fair Chance." It is divided into levels which concentrate on a few reading skills at a time and serve as a basis for giving individual instruction in small groups. Teaching decoding or word recognition is separated from teaching comprehension because children don't necessarily learn these two skills at the same rate. In kindergarten and first grade the Fair Chance program drills children intensively in patterns of spoken language, using the repetitive audio-lingual methods of foreign-language teaching.

With federal "poverty war" funds Columbus hires parents to work as classroom aides to teachers and as neighborhood aides assisting the guidance counselor. Principal Jerome H. Gilbert describes the aim of this project as reducing the alienation between parents and the school. "The styles of the school and of the home are so polarized that the child finds it extremely difficult to adjust to each of them daily," writes Gilbert. He adds that the project sees teachers as "the culturally different ones, as the strangers in the sub-culture of the school." The program seeks to "sensitize teachers to the life style, language, and concerns of the parents and children . . . as well as to modify the parents' perceptions of child-rearing, learning, and of the school."

Columbus is one of 80 schools in the nation designated in 1967 as a demonstration center for visiting educators by the National Education Association's national commission on teacher education and professional standards.

Santa Barbara's Center for Coordinated Education

Twenty-three school districts in Santa Barbara County are allied with the University's Santa Barbara campus to learn how to graft a hardy new idea onto an old or ailing school—and make it take.

The five-year-old consortium, sponsored by the Ford Foundation, joins public elementary and secondary school districts, private and parochial schools, junior colleges and the University.

They came together "out of a concern for the disjointedness and parochialism, the lack of consistency and the conflict of purpose" that tend to permeate American education. More than two-dozen classroom experiments throughout Santa Barbara County have tested new methods of instruction, of teacher in-service training and school organization, and have developed tighter articulation in teaching English, foreign languages and mathematics from early elementary grades through high school. The central purpose was to turn teachers' and administrators' attention beyond their own classrooms toward a mutual concern for all children's lifelong schooling.

Now the Center's original work to achieve one logical sequence of learning, from kindergarten through college, countywide, is narrowed into a prerequisite study of the change process itself: How do schools and school staffs come to nurture new ideas rather than resist or distort them?

"We are beginning to learn," writes Center Director Louis J. Rubin, "about the conditions under which change occurs and about the inhibiting restrictions in both the individual and the organization."

A series of publications evaluating the Center's own experience with innovation pinpoints some of the "inhibiting restrictions."

- "A strong tendency to alter the shape of a program to give it a more dramatic luster, to meet the requirements for additional outside funding, to imitate a highly touted program elsewhere, or to avoid an internal hang-up that is particularly sticky."

- Too much responsibility on not enough qualified leadership. "It is not uncommon to find an aggressive, dynamic district of moderate size involved in a dozen or more major undertakings. . . . It is difficult to know which consequences to ascribe to which programs." Where there are too many new projects, none of them gets a thorough test.

- "Teachers, sadly enough, are sometimes required to take on innovations which call neither for understanding nor for accepting the rationale of the innovation. Change is pursued for its own sake."

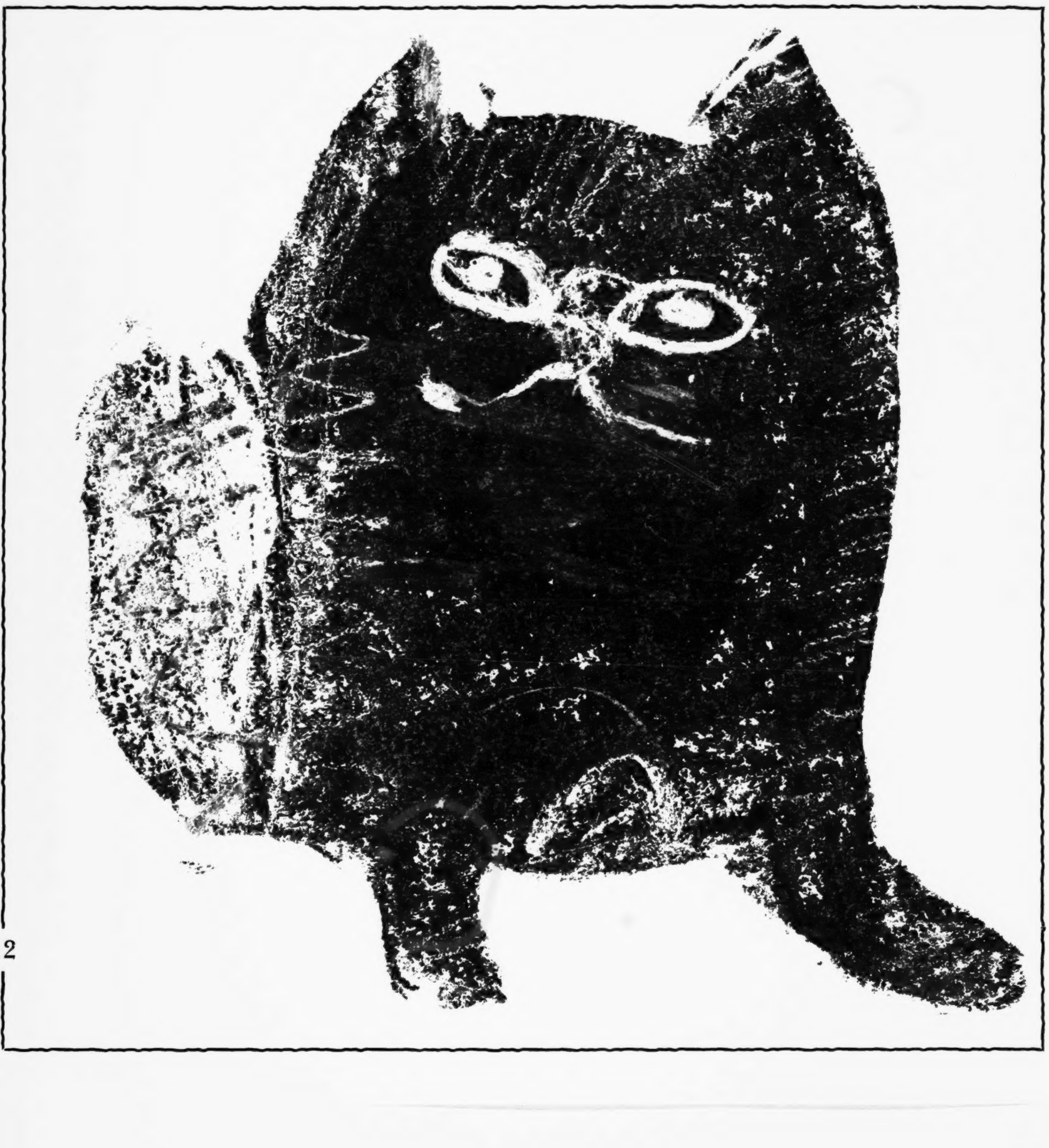
- "Mediocre teaching can distill and even pollute the value of everything that goes on in the classroom. . . . Very little can be achieved until the teacher has relatively objective information on the way he behaves in the classroom and a clear understanding of the consequences of that behavior. . . ."

- "A remarkable incongruity" among teachers of the same school as to what they are all together trying to achieve. "The important aspirations of the school should be striven for with reasonable consistency, and the efforts of a teacher ought to sustain rather than countervail his colleagues. Artfulness and virtuosity in the teaching act must clarify rather than muddle the underlying logic of the school's purposes."

- "We are victimized by orthodox conceptions about what a teacher ought to do, about how a principal ought to work with his staff, about the distribution of authority, channels of communication, placement of responsibility, and even about the student's role in the learning process. Orthodoxy, in this sense, is antithetical to self-renewal."

To break such inhibitions the Center now concentrates experimentation on four major themes: administrator effectiveness, teachers' self-directed professional growth, teachers' diagnosis of and prescription for individual pupil's learning problems, and "synergetics"—getting all members of a school staff to defer individual objectives in order to agree upon and attack schoolwide priorities.

"Our work suggests," writes Rubin, "that the remedy for many of the problems confronting schools is *not* more dramatic invention but rather the intelligent, systematic, individualized application of principles already well known."



Inquiry

Scientists and scholars have joined education professors and classroom teachers in designing new curriculums which emphasize in addition to facts the scientists' method of discovering and organizing knowledge and which use psychologists' new understandings of children's early creative and cognitive growth.

"Never present a fact for its own sake," Donald MacKinnon urges teachers. He is a professor of psychology at Berkeley and director of the Institute for Personality Assessment and Research. "We should seek to develop in our students a capacity for intuitive perception, an immediate concern for implications, and meanings, and significances, and possibilities beyond that which is presented to the senses. This is not to suggest a slighting of facts, for without a richness of experience, which may include a considerable body of fact, intuitions may be original but they are not likely to be very creative."

Following are descriptions of a few "inquiry" curriculums which encourage children to be discoverers—not just consumers—of knowledge.

Science

From 1959 until 1966 the Elementary School Science Project at Berkeley provided a work center in which research scientists translated basic concepts from their individual disciplines into units of science study for average elementary school children with no special science aptitude.

They wanted to reverse the tendency of most current elementary science teaching and texts to regard science as a systematic accumulation of established facts with social utility. The units they wrote give major attention to the patterns and generalizations behind the facts. "Science is concerned much less with the utilization of the answer to a question than it is with the question," says Lloyd F. Scott, a mathematician, professor of education, and an originator of ESSP. "Youngsters can and should learn the pleasures of basic science before their curiosity is dulled and the natural world is rendered commonplace."

The study was sponsored by the National Science Foundation and was cooperatively administered during the seven years by as many as 21 chemists, physicists, zoologists, botanists, mathematicians, physiologists, paleontologists, and educators. They and their writing and teaching staff created, wrote, taught and tested (in Berkeley Laboratory Schools) 12 science units: four on math coordinates, three on animal coloration, two in physiology, one each in paleontology, botany, chemistry. All are inspired by the idea that the scientist's basic approach to learning is perfectly appropriate to young children.

On this premise, Robert Karplus, Berkeley professor of physics, who was a founder of ESSP, now leads an effort to create an integrated curriculum for science for the whole elementary school.

With National Science Foundation support, Karplus, Herbert Thier, and the staff of Berkeley's Science Curriculum Improvement Study aim to create the conditions in which "a child can learn to use his mind as a scientist does." These conditions are: (1) "the absence of an authoritarian teacher, (2) the presence in the classroom of phenomena to be investigated and discussed, and (3) the freedom for pupils to explain the phenomena with no restrictions except the necessity to conform with the data."

The SCIS program is structured on the fundamental concepts of both physical and biological sciences, organized in rising levels of abstraction. It tries to convey that scientific ideas are the result not only of observations of nature but also of human inventiveness and imagination. SCIS aims for pupils to use their own creativity to integrate their discoveries into increasingly sophisticated conceptual frameworks, whether they intend to become scientists or "scientifically literate" laymen.

The basic procedure is to bring selected objects or organisms into the classroom for children to observe or manipulate, sometimes in any way they wish and sometimes under the guidance of the teacher. These preliminary explorations give the children a direct experience "which is essential if something more than verbal behavior is to be learned."

Next, in the "invention" lesson, the teacher introduces the scientific concept that describes or explains what the children have observed. Finally, other experiences are introduced that present further examples of the concept. These are called "discovery" lessons. The child is expected to recognize that the new concept has applications to situations other than the original example and to make further applications of his own.

"Intellectual freedom is essential if the child's learning is to be a real conceptual growth and not a verbal parroting of what the teacher wants to hear," Karplus writes. "The surest death of a meaningful science lesson is the response (explicit or implied) by a teacher that a child's answer is not the one she is looking for."

Karplus strongly believes science education must begin "while the child is young and his ability to carry out abstract mental operations is being developed." He notes "there is a temptation to postpone science until children have reached the intellectual maturity of the middle teens. Efforts at this stage, however, reach only that fraction of the student body which is favorably disposed toward science because of earlier experience at home or at school. For the others, many of whom form a strong dislike for science, it is too late."

Social Studies

Santa Monica school children are discovering what makes Los Angeles not just a city or a county but a region, in an experimental geography curriculum designed by UCLA's Charlotte Crabtree, assistant professor of education, and Richard Logan, professor of geography.

The new curriculum for first, second, and third graders was designed for Miss Crabtree's U. S. Office of Education study to find out whether children so young can be taught to analyze geographic space the way geographers do. She also wanted to find out whether children taught to engage in geographic inquiry would learn and remember as much basic geographic knowledge as children instructed through a conventional teaching program.

The experimental curriculum used the Los Angeles basin as a laboratory in which pupils investigated its array of physical and cultural features and discovered how they interact to make the region distinctively "L.A." From their beginning experiences, children were taught to use geographic tools which were authentic and sophisticated, though introduced in ways in which young children could make use of them. Many of the tools were identical to those used in courses at the college level: air photos, terrain models, acetate overlay map systems, and documents of historical and contemporary importance to the geography of the region. Only their interpretation was modified to fit the young child's level of thinking.

Problems were posed. For instance, where would all the gravel and cement come from that would be needed to rebuild an urban redevelopment area the class had visited? With their maps and other aids the children investigated sources of supply in the region's mountains, foothills, streams, deserts. From their physical data they theorized where mines and cement plants would locate. Then they had to take account of additional cultural data—truck and rail routes, distribution and marketing centers, and they discovered they had to revise their original theories.

After testing the sixteen-week curriculums in the three grades during 1966, Miss Crabtree concluded that the curriculum in geographic inquiry was superior to conventional lessons in teaching children to understand and apply "the central, most powerful concept of modern geography"—that of a real association. The second and third graders who were taught skills of geographic inquiry also acquired significantly more geographic knowledge than did the second and third graders in the more conventional programs.

There were no statistically significant differences between the inquiry and the conventional curriculums at the first-grade level. First graders instructed in inquiry learned just as many facts as did their peers.

Santa Monica schools are using USOE funds to spread the new curriculum and its teaching aids throughout the district. This will give a chance to observe the growth of geographic understanding as children progress from first-grade geography—focusing on their home neighborhoods; to the second-grade—where they investigate patterns of interaction of features throughout the whole region; and through the third-grade—in which they study the region's use by successive generations of settlers.

- Teachers who try to teach problem-solving skills along with facts have a practical reason. No one knows what facts will still be relevant in the year 2000, when today's pupils will be the "command generation."

Two Berkeley psychology professors, Richard S. Crutchfield and Martin V. Covington, observe that students today spend so much time learning potentially obsolete facts that they may get little or no instruction in how to think. In collaboration with researchers Robert M. Olton and Lillian B. Davies, and with sponsorship from the Carnegie Corporation of New York, they are developing several series of instructional materials for upper elementary schools called the Productive Thinking Program.

The first tackles general problem-solving in 16 programmed-instruction lessons, each an individual cartoon book telling an adventure of school-age Jim and Lila Cannon, who are learning to be detectives under the tutelage of their Uncle Jim. As the fifth- or sixth-grade pupil is led page-by-page to unravel a mystery along with Jim and Lila, he learns to formulate questions, generate ideas, look at a problem in a new and different way when blocked at a dead end, and to test ideas against the facts; in short, to think like a detective, a scientist, or a scholar.

The "Jim and Lila" program was first tested in Berkeley Laboratory Schools and in Newark (Alameda County), and is now being used experimentally by schools in 38 states and 16 foreign countries. It is being translated for use in schools in Chile and other Latin American countries. There is interest in its translation for Spanish-speaking Mexican-American children.

Crutchfield and Covington report that students who have used the Productive Thinking Program score substantially higher on tests of creative thinking than do comparable control groups. The amateur detectives solve more problems, think up more ideas, produce ideas of higher quality and show more confidence and pleasure in using their minds. This superiority persists through follow-up tests five months later.

Will "Jim and Lila" inspire disadvantaged children? Gifted children? How well does the problem-solving skill transfer to other school work? "Detectives" Crutchfield and Covington and their associates are tracking these clues themselves. And on their drawing boards for development in the next several years are further series on understanding and explaining, invention and innovation, and creative expression.

- The least understood and least applied of all the principles of democracy are the Constitutional provisions which protect the lone individual when he is confronted by the legal powers of the state. This observation by a group of UCLA professors led to the founding of the Committee on Civic Education, headed by the late Howard E. Wilson, education dean, in 1964.

The Committee's first effort was a new elementary school curriculum on "due process" written by Charles Quigley, social studies teacher and researcher. It combines the Socratic method of law school training—a system of probing questions—with students' own classroom experience in writing rules, applying, judging and changing them. With Danforth Foundation support, the unit was pilot-tested in fifth grade in UCLA's University Elementary School and then field-tested in 1965–66 in eight Southern California schools. Well-schooled and well-off Americans frequently are as careless about due process as the poor are ignorant of these rights, the Committee observed, so the curriculum is aimed at schools in both advantaged and disadvantaged neighborhoods.

In 1967 the Committee curriculum was expanded into *Your Rights and Responsibilities as an American Citizen.* Besides due process it now includes units on liberty under law, freedom of expression, freedom of religion and equal protection under law.

The students' "casebook" includes portions of the Constitution, historic trials and events establishing principles of due process, actual U.S. court cases, literature, and films such as *The Ox-Bow Incident* and "Revolt in Hungary." A teacher's guide poses hypothetical situations and questions which lead pupils to construct their own systematic structure of Constitutional principles.

A field test of the curriculum in ten school districts around the state and in several grades—fourth, sixth, eighth and eleventh—is sponsored by the advisory panel to the Committee on Teaching about the Bill of Rights of the State Board of Education.

Language

In 1952 Walter Loban, professor of education at Berkeley, began taking annual samples of the speech, reading and writing of a group of 300 Oakland school children. Three million tape-recorded words and 14 years later, in 1966, the taping and testing of this "stratified sample of a larger universe of children" was finished. But Loban and his research staff are continuing to analyze their unique data on the language development of children and its implications for curriculum. In one of the many interpretations of his studies for teachers, Loban counsels them to listen to their pupils and encourage them to converse, not to preach grammar to them.

He recommends small conversation groups led by the teacher, and pupil-teacher dialogues, to give children "many opportunities to grapple with their own thought," to *hear* how language goes and *talk* their way to improvements in their own expression.

"The superiority of [language-proficient children] in handling oral signals effectively—their skill at using pitch, stress and pause—combined with their relative freedom from using partial structural patterns—is impressive. . . . Instruction can yet do more than it has *with oral language*." Many pupils who speak poorly will have trouble reading and writing, Loban says. He advises teachers to use new recording equipment to diagnose their pupils' speech and to bring a new dimension of language and literature study into their classrooms.

- A study which followed 700 Oakland pupils from first through third grade measured the influence of the child's spoken language on his ability to learn to read. At the same time Robert B. Ruddell, associate professor of education at Berkeley, compared the effectiveness of two different reading programs in poor, middle-class and privileged neighborhood schools.

Ruddell matched a "basal" reader, characterized by low correspondence between letters and spoken sounds, against a program which has high "grapheme-phoneme" consistency. And he tested whether either program is improved by adding linguistic instruction, which teaches how the structure of sentences affects meaning. Ruddell designed "linguistic blocks" to help children see for themselves how words are modified to change meaning and how they go together to make sentences.

When the children were tested at the end of second grade Ruddell found that there was no significant difference between the two reading programs *except* when both were supplemented by the linguistic lessons. Then the one with high letter-sound consistency taught best. The unsupplemented basal reader and the unsupplemented phonetic program taught word recognition equally well.

Ruddell also found that children who had high scores in reading comprehension were those who had done well on pre-reading tests of sentence syntax and word inflection—who thus had gained language competence from their own speech before they learned to read.

Ruddell followed the 24 Oakland classrooms through their third and final year of the experiment during 1966–67. His study is supported by the U.S. Office of Education.

- "English, of all the subjects in the curriculum, is the most vulnerable to community reaction against change," wrote teachers in a Davis-centered project modernizing English curriculums throughout 13 Sacramento Valley counties. The

Area III English Project is designed to start the change process with the person closest to any change-leery community, the classroom teacher.

Started in 1965 by Area III County Superintendents Publications and Curriculum Development Committee, the Project is renewing the content and knitting together the sequence of English and languages courses from kindergarten through twelfth grade and throughout the thirteen-county area. Helen Strickland, English consultant of Placer County Schools Office, heads the Project.

Working procedure has been for the teachers, curriculum experts and administrators of the participating counties to spell out their needs in terms of what their teachers need to learn. Requests for consulting services, workshops and Extension courses have been met by collaboration of Davis Education and English Departments, Extension Division, and other colleges and universities in the area.

For three years the Project has held workshops at Davis to train 40 teacher-consultants drawn from classrooms in the 13 counties. They serve as leaders of curriculum renewal in their own and other districts. In spring 1967 teams of these teacher-consultants gave their own series of workshops for teachers in 20 school districts in Area III.

Four Extension courses have been sponsored by Davis Extension, English and Education Departments. At each one some 300 teachers from all over Area III have investigated the "new English" and commented on the preliminary draft of the new California Framework for the Teaching of English.

Guidelines for new materials and methods, suggested by the 40 teacher-consultants and consulting professors, are contained in three interim reports, the latest published in fall 1967.

Wayne Harsh, associate professor of English and Linguistics, who has been a continuing consultant to the Project, summarized some of the emerging guidelines in the first report:

"In elementary school, teaching of good literature is inseparable from teaching reading, although only a few elementary teachers as yet have the background to teach literature . . . Its own browsing library is as essential to the English classroom as laboratory equipment to the science classroom . . . A student who has learned how to read a poem has learned how to read."

Fine Arts

The improvements in teaching sciences and languages in many California schools have come at the sacrifice of time in the school day, and money in the budget, for teachers and facilities to teach art, music, dance and drama. This may be false economy, according to the National Commission on the Humanities. It calls attention to "a novel and serious challenge to Americans—the remarkable increase in their leisure time. The question, 'What shall I do with my spare time?' all too quickly becomes, 'Who am I? What shall I make of my life . . .' The arts and letters are where we look most directly for enrichment of the individual's experience and his capacity for responding to it."

This enrichment can best begin in early school years, say the art educators, who respect the young child's aesthetic appreciation and expression as scientists respect his intellectual capacity. "The very purest art has no more responsive, intuitive listener than a child," wrote the late composer and teacher Zoltan Kodaly. "How much easier a child learns the good than the bad."

In this view, fine arts education must be more than exposure to "culture." If it is to enrich his capacity for individually responding to experience, learning in the arts must include development of the capacity for creative expression.

- A junior high music curriculum encouraging the creative experience of composing has been developed and evaluated at Berkeley. In 1965 George Kyme, supervisor of teacher education in music and lecturer in music, began a two-year experiment with 14 seventh-grade music teachers, their supervisors and pupils in Berkeley, Oakland and Richmond. Its purpose is to develop "musicality"—which Kyme defines as "the ability to grasp a musical idea in its completeness."

The ideas of Kodaly and Karl Orff are incorporated in Kyme's curriculum, which uses simple instruments such as tone bells, autoharp, string bass, and the children's own voices to teach them to express a musical idea by composing, not just by performing.

Kyme developed tests for evaluating children's musical growth and identifying factors which contribute to their aesthetic sensitivity. Helping to teach and evaluate the new curriculum are three composers who are Ph.D. candidates in music education and nine graduate students studying in a pilot program for a master of arts in teaching. The study is sponsored by the U. S. Office of Education, for whom Kyme is completing his evaluation.

Evaluation

Innovation has been so rapid that educators have not yet invented tests and evaluation systems modern and sophisticated enough to tell them precisely how well the new curriculums work for different kinds of teachers, students and schools.

Thus UCLA is pioneering a Laboratory for the Study of the Evaluation of Instructional Programs. Sponsored by the U. S. Office of Education it will develop tools for analyzing what the new curriculums aim to teach, how well they accomplish it, and how much they cost.

The School of Education cooperates in the laboratory with faculties from departments of psychology, sociology, mathematics, philosophy and biostatistics, as well as University Elementary School and the League of Cooperating Schools.

The laboratory will stress the development of tests both for specific curriculums and for schoolwide instructional programs such as nongrading. It will fill three major gaps in present-day evaluation: measures of the effects of the school environment on learning, of the effectiveness and cost of administrative activities (such as counseling or school health), and of the multiplicity of effects of one curriculum.

Education Professors Erick L. Lindman and Merlin C. Wittrock, who head the laboratory, believe that, just as the *pupil's* aptitude, personality and previous achievement all affect the success of an instructional program, so do "the capacity, the style and the achievement of the *school* in which it is taught."

Further, Wittrock and Lindman and their colleagues believe that all learning activities have many results, perhaps all equally important. Curriculums, methods of teaching or classroom organization often can be shown to be successful when evaluating according to a single educational goal, but we do not know how to measure them in terms of their multiple effects. For instance, "The increased emphasis on abstract verbal learning has demonstrated that children can learn more than we used to teach them; but is this more concentrated cognitive emphasis also related to the prevalence of cheating, to anxieties about grades, and perhaps other negative effects?"

Successive phases of schooling

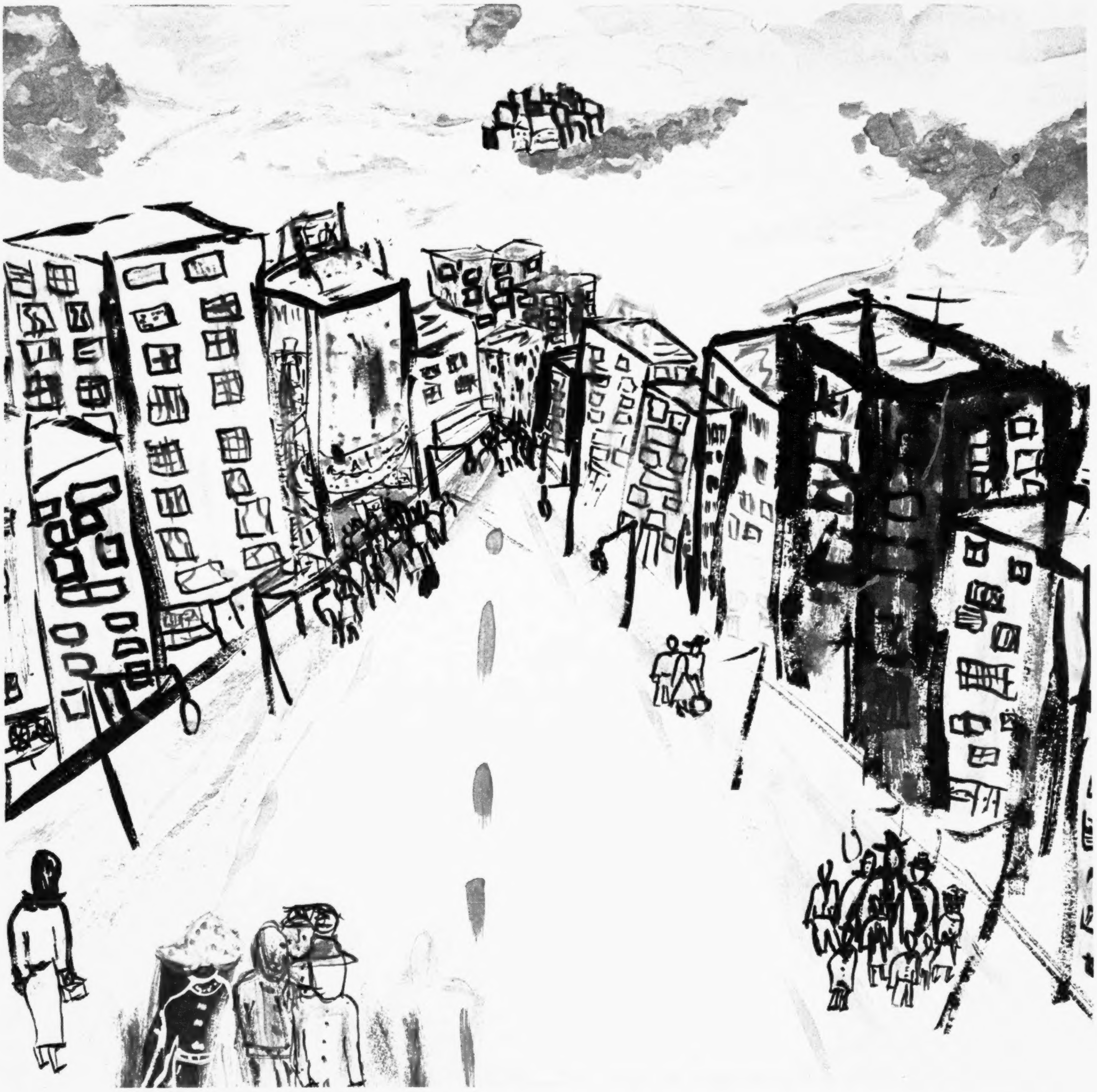
"Subject by subject curriculum reform is an important, never-ending enterprise," says John Goodlad, dean of UCLA's School of Education. But it cannot resolve the school's dilemma today: so much to teach and so little time in the school day.

Exploding knowledge suggests that schools must teach more and more separate subjects, Goodlad points out. "But a pupil's power to deal significantly with any one aspect of the knowledge explosion seems to require that he gain depth besides breadth."

A way out of this dilemma which values both breadth and depth in the curriculum is being tested at the University Elementary School. It starts with two assumptions: that "virtually all our young people will complete high school," and that "all children and youth go through similar distinct phases of intellectual development, determined by both biological and environmental factors, even though this development is irregular and markedly different from individual to individual."

Goodlad calls this nursery-to-college curriculum concept "successive phases of schooling." Because pupils' development is so irregular and different, the plan must operate in nongraded schools which let a pupil move at his own pace. The first phase enrolls children as young as three, for two or three years in which they learn awareness, attention, self-confidence and habits of thought. Next, the lower elementary phase, lasting three or four years, stresses fundamental skills—speaking, reading and writing. In the next phase—for children from about eight to twelve years old, the pupil "encounters and uses a variety of disciplined techniques for observing natural and social phenomena, discovering in them order and continuity, and expressing his own sense of order and continuity." High school is the last phase, concentrating on "the strategies of separate academic disciplines."

"Our continuing curriculum sin," charges Goodlad, "is that we vacillate from excess to excess, with what is currently fashionable being applied indiscriminately to the whole of formal education." He calls for state and local school systems—assisted by scholars working with national grants—to pinpoint the educational functions necessary at each stage of local children's development, and to translate these into specific school courses, programs, teaching methods and facilities appropriate to each community.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Individualization

There are striking differences among children in their capacities to profit from schooling. Some differences the schools probably can't change, such as that part of intelligence that's inherited. Other differences, however, such as poor eyesight, malnutrition, emotional disturbance, and the effects of poverty and discrimination on learning ability, can be dealt with.

Teaching unique learners

The idea that schools should treat children differently so that they can learn equally well is familiar in the form of public school programs for "exceptional" children—gifted, physically handicapped, mentally retarded or educationally handicapped. (The latter is an official designation for children who are normal in intelligence but seriously retarded in their schoolwork.)

A plan called "educational engineering" for teaching the educationally handicapped has been developed at UCLA's Neuropsychiatric Institute School by Frank M. Hewett, associate professor of education and head of the school. The system translates well-known psychological theory and successful mental institution therapy into common language and practical procedures for the public school classroom.

The trouble with the public school as a place to teach an educationally handicapped child is that usually he is not ready to be in school at all. "He has not mastered the tasks of paying attention, responding in learning, following directions, exploring his environment, and getting along with others," says Hewett. These are the first five levels on a "hierarchy of learning" devised by the staff at NPI school in order to diagnose learning problems. The average child has climbed all these rungs before he starts school, and he spends his school years at the final two levels on the hierarchy—"mastery of skills" and "self-motivated achievement." But the learning-disabled child is stuck at the bottom of this ladder of learning.

Educational engineering is a way for the classroom teacher to shift teaching back to the levels at which a learning-handicapped child can succeed and start to climb.

Hewett's "engineered" classroom for nine children provides areas for work at all levels on the hierarchy: individual desks for math, reading, and other subjects (mastery-achievement); nature/arts-crafts/group discussion area (exploratory-social); and a sort of escape-hatch corner furnished with puzzles, learning exercises and individual games (attention-response-order). A regular teaching program of reading, language, art, science and physical education is conducted by the teacher and a teacher aide. They profile each child's learning characteristics according to the hierarchy.

Their teaching aims to provide three essential ingredients which Hewett prescribes: "A suitable educational task for (each) pupil, a meaningful reward following accomplishment, and a degree of structure under the control of the teacher."

Hewett is experimenting with a reward system. At 15-minute intervals throughout the school day teachers recognize each child's accomplishments and studiousness by checking off squares on his daily work record card. No matter what task he's assigned to the pupil can earn his full quota of "checkmarks" if he's making a good effort to meet objective work standards. These standards don't mean pleasing teacher or surpassing the other pupils, Hewett emphasizes. They mean behaving like a student.

When a pupil becomes restless, resistant or disruptive he is not disciplined or banished but assigned immediately to one of the alternate learning centers where he works at a new task, at a lower level on the learning ladder, until his behavior improves. Thus he can keep on earning checkmarks, keep on experiencing success, keep on being a student.

Each week's earnings of checkmarks can be exchanged for candy, toys and trinkets. These tangible rewards, says Hewett, are not much help unless dispensed within the total design of diagnosing each child's learning level and then prescribing his tasks and rewarding him *at that level.*

In a U. S. Office of Education demonstration project in Santa Monica public schools, Hewett is testing educational engineering in eight classrooms of nine- to ten-year-olds. "Checkmarks" are being evaluated separately, with three classrooms carrying out all specifications of engineering except the reward system

Both in Santa Monica and in special education classrooms in Tulare County, which have used a form of engineering and checkmarks for two years, Hewett is impressed by "purposefulness, control and productive atmosphere."

Do tangible rewards for learning represent "an unwholesome compromise with basic educational values?" Hewett thinks not. The emotionally disturbed or learning-disabled child is a unique learner who does not respond at first to a conventional school room and its traditional rewards for learning. "To fail to teach a child because he lacks the capacity to learn is one thing, but to fail because of one's own lack of flexibility and realistic assessment of his needs is quite another."

Who's failing?

"The child who fails to learn in school is communicating vital information about himself," writes Hewett.

The children of America's minority groups, who fail in appalling numbers, are also communicating the failure of their schools. "The real test of the school is the success or failure of the child who is different—whether he's gifted, dull or disadvantaged," observes Thomas P. Carter, assistant professor of education at Riverside.

Charged with providing equal opportunity for so many children who are different, schools more and more are judged by their ability to individualize. "Some youngsters—those born and raised in the inner-city ghetto, for instance—require much more than an 'average' education just to give them an average start in life," says U. S. Education Commissioner Harold Howe II.

"What will be, will be."

Perhaps it is too much to ask the schools by themselves to give the culturally different child an average start in life. Charles S. Benson, professor of education at Berkeley, contends, "The school is a rather weak instrument to compensate for the disparity that exists between the home life of the lower-class child and the home life of the middle-class child. We must deal also with jobs, housing, recreational and welfare services available in the whole neighborhood in which poor children live."

These other aspects of the lower-class Negro child's experience create attitudes which tend to hold him back even when external barriers of discrimination are removed, observes Alan B. Wilson, associate professor in Berkeley's School of Education and research associate at the Survey Research Center.

In several community surveys and action projects among Negro school children and their parents in Richmond, Wilson and others are trying to find out whether such attitudes can be changed, and, if so, whether the change affects school performance. These studies are supported by the National Institute of Mental Health and the Office of Economic Opportunity.

From his surveys of teenagers and adults in seventeen-hundred Negro households, Wilson reported "sharp contrasts between the Negro and other youths —regardless of social class—in their estimation of their own ability and the possibility of controlling their fate." On a questionnaire item, "I'm capable of getting A's and B's in school," 22 percent of Negro boys answered "yes," compared to 45 percent of other boys. Responding to the item, "What is going to happen to me will happen no matter what I do," 40 percent of Negro boys agreed, compared to 22 percent of the others.

These feelings of "incompetence, futility and alienation characterize the beliefs and behavior of low-income Negro adults as well as youth," Wilson found. They do not participate in school affairs. "Their personal contacts are frequently unsatisfying," he wrote. "There is a discrepancy in culture—in language and values—and sometimes a conflict in interest between the poor and the professional functionaries."

Two experiments are designed to repair this alienation. One places Negro "new careerists" on school staffs to act as go-betweens between school and home. The other tries to change attitudes toward schooling by placing children in parent-cooperative nursery schools and in after-school study halls. The nursery schools and study halls are being run for two years in a public school, a neighborhood house, and a Negro community action group. These agencies are assumed to have widely varying degrees and styles of working with parents and neighbors. The project's goal is to see whether the programs which most successfully involve adults will improve children's attitudes toward school, and thus affect their success in learning.

Social class, attitude and achievement

A slum school can be a children's domain in a far more literal sense than a middle-class school. For in a grade school where lower-class children dominate the enrollment, children's standards, not adults' may prevail among the pupils.

This striking characteristic of slum schools was reported by Alan Wilson and T. Bentley Edwards, Berkeley professor of education, after their 1959–63 San Francisco area study, "Attitudes as Related to Success in School," for the U. S. Office of Education. The finding has been echoed and underscored in the Office's 1966 survey (the Coleman Report) and the more recent report of the U. S. Commission on Civil Rights on the nation's progress toward desegregating schools and improving education for Negroes.

Edwards and Wilson found much stronger social solidarity—valuing of friends' approval, resistance to adult standards—among sixth-graders in lower-class schools than among children in middle-class schools. They found that in lower-class schools success in schoolwork was not important in gaining approval from friends. And they found teachers tending to pitch their expectations at the levels set by the students themselves. These attitudes are a heavy lid on pupils' school achievement.

All this is true of white children in lower-class elementary schools as well as of Negroes, Wilson stresses in a 1966 report to the U. S. Commission on Civil Rights, based on the Survey Research Center studies of Negro youth in Richmond. Regardless of whether elementary schools were racially integrated or segregated, the study found, the school "social context" substantially influenced pupils' later success at higher grade levels; but socio-economic and racial characteristics of children's home neighborhoods did not.

Wilson compared progress of children in lower-class schools with that of children in middle-class schools, carefully accounting for differences in individuals' family background and mental maturity at the time they started first grade. Even taking these differences into account, he found that predominantly lower-class elementary schools—where pupils' parents were unskilled laborers, unemployed or on relief—significantly retarded the academic development of both white and Negro pupils.

Since low social class and racial minority are so closely correlated, the disadvantages with which most minority-group children enter public schools are not lessened as they progress through the grades, Wilson charges. They are made worse.

He concludes that if schools would make real the American ideal of equal education for all they must integrate social class as well as race in primary schools, and they need not wait for residential integration.

- Comparing lower-class and middle-class pupils as to their *aptitudes* for different kinds of learning, Edwards and Wilson found in their 1959–63 Bay Area study that large numbers of lower-class children show "deliberative" interests, which would predispose them for scholarship, but they did not score highly on IQ tests. The effect of this discrepancy, Edwards wrote, is that "when IQ is used to select children for advanced educational opportunities . . . great numbers of lower-class children who are interested in deliberative activities are . . . spurned by the schools."

Similarly, the lower-class students who tested high in "theoretic" interests—which correlate with scientific competence—were often handicapped in verbal ability. But "schools emphasize the use of words in pursuit of ideas," Edwards pointed out. "They reject the short-cut from things to ideas, a short-cut which seems especially appealing to underprivileged children." Thus many lower-class children with theoretic aptitude are nevertheless labeled as "low achievers."

Curriculums especially designed to take "the short-cut from things to ideas" allow children with verbal disadvantages to prove they have the talent for success. One such course is SEED, an algebra and calculus curriculum designed for disadvantaged elementary pupils by William Johntz, Berkeley High School teacher. His experimental classes in Berkeley and Richmond, taught by University graduate students, are demonstrating that disadvantaged children can learn abstract, advanced mathematical concepts and that this success improves their performance in other school work too. The project is aided by Regents' "educational opportunity funds" which are awarded to faculty and student activities which help disadvantaged students to qualify for University admission.

- The poor minority-group child who has ability but doesn't achieve is often assumed to be scornful of school, disinterested in learning. This can be a big mistake, believes Seymour Feshbach, professor of psychology and director of the Psychology Clinic School at UCLA, after a year's experience in a long-range program to raise the performance of low-achieving, disadvantaged boys.

The project is comparing two ways of helping disadvantaged boys. One treatment is the Clinic School itself, where 20 boys are enrolled for instruction which maximizes individual attention. In the other treatment, boys with similar characteristics and problems remain in their own neighborhood schools and are served by Clinic School staff. They visit each boy in school to tutor and counsel him, and they work with his classroom teacher and his family. The research is supported by state compensatory education funds.

At the start of this project, during a remedial session at the Clinic School in summer 1966, Feshbach compared low-achieving boys from poor minority-group families with similarly low-achieving boys from middle-class white backgrounds. By the end of the summer the elementary disadvantaged boys had made much greater progress in their remedial reading and math lessons than the middle-class boys in the same grades. The results were exactly reversed for junior high boys: the disadvantaged boys did improve but not nearly so much as their middle-class school-mates.

Feshbach believes that the disadvantaged boys' fear of failure may be an influence in this pattern. Administering the Test Anxiety Scale for Children to all the boys at the start of the summer, Feshbach found to some surprise that the disadvantaged grade-school boys were just as anxious about school as the middle-class boys. The disadvantaged junior high school boys showed more fear than the little boys. And they were more anxious than their teen-age middle-class peers.

"We suggest that if these disadvantaged children did not value academic achievement they would not be anxious," Feshbach reported. "Their school deficiencies are not simply a function of low interest or a 'don't care' attitude, but rather appear to be associated with fear and avoidance of failure." Feshbach considers it significant that the junior high disadvantaged boys, who showed the greatest degree of anxiety both at the start of the summer and at the end, also improved the least in basic skills. Still, there was a significant decline in anxiety in both young and teen-age disadvantaged boys by the end of the summer.

- Avoidance of failure experiences is not exclusively a trait of the poor, the Negro, the Mexican-American or other minority group members. "All youngsters tend to tackle tasks in which they have roughly a 50–50 chance of succeeding," observes Lawrence H. Stewart, professor of education and head of counseling at Berkeley. What is distinctive is that Negro boys believe that school does not offer them much chance of success.

Their natural reluctance to invest in what seems less than a 50–50 gamble is just one of the attitudes which brakes the success drive of able Negro boys. In a U. S. Office of Education pilot study Stewart and Robert V. Moulton designed procedures in which school counselors could interpret several of these attitudes to Negro junior high school boys and thus help them gain an understanding of the reasons for their trouble in school.

Some of the other attitudes interpreted to the boys were:

The Negro boy may feel that his friends are his major source of security. If this is true, and if the friends disapprove of school success, the Negro boy may find it very difficult to work for school success even though he himself values it.

"The powerful and clear-cut external frustration of discrimination" may tend to make the lower-class Negro rely on fate or luck—forces outside himself—for success and to blame them for failure. Rejecting personal responsibility can keep him from even trying to succeed—and thus save him considerable grief in instances where discrimination is more powerful than his individual effort would be. By the same token, the Negro who succeeds is probably one who has assumed a very rare degree of personal responsibility for what happens to him. Thus, "achievement for many Negro youths may be quite costly in terms of guilt, self-blame and general psychological stress."

Some bright and ambitious Negro youths may not try for school success because they are already excelling in music, athletics or other activities.

Future career goals may be unusually difficult for lower-class Negro boys to develop because relatively few Negro men have advanced to middle-class status, where they serve as close-to-home "role models." Thus the goals of the success-bent Negro adolescent boy may tend to be short term—staying eligible for the football team, for instance, or keeping parents' approval.

Compensatory or complementary?

All these attitudes most likely affect Mexican-American youth as well, Stewart believes, although much less is known about the school attitudes and experiences of Mexican-American children. And educators, anthropologists and sociologists observe that the Mexican-American comes to school from a culture which is much more different and separate from mainstream America than the Negro's.

UCLA's Mexican-American Study Project is a major effort to fill the gap in knowledge about this minority group. Its study of the public schools is conducted by Thomas P. Carter, assistant professor of education at the UC-Riverside campus. He observes American teaching of Mexican-Americans from the perspective of his prior study of schools in several Latin-American nations.

Carter's survey of school programs for Mexican-American children covers southern California, Texas, New Mexico, Arizona, and southern Colorado. It is supported by the College Entrance Examination Board. Its concern is with the basic assumptions and goals of so-called "compensatory" programs, past and present. "Are they attempts to impose the dominant white middle-class culture on children whose non-school experiences are assumed to be largely negative or non-existent?" Carter wants to know. "Or does the school with Mexican-American children assume that both majority and minority ways of life are valid, try to stimulate diffusion of both throughout the school, and try to make a real liaison with the minority community outside the school?"

He is particularly concerned with studying school systems which use both Spanish and English to instruct Mexican-American children in primary grades, which continue to teach both languages to all pupils, and where teachers emphasize values and experiences of both societies—both bread and tortillas.

• In a school that ignores his individuality by ignoring his language "the Spanish-speaking child grows to feel that his Spanish is a nuisance and a handicap and that he himself then is a nuisance and a handicap," says Clifford Prator, professor of English at UCLA. He is joint director of a UCLA-State Department of Education project to develop lessons and teacher guides for teaching English as a foreign language to Spanish-speaking pupils. Prator and UCLA linguistics specialists base their new California curriculum on their experience teaching English in the Philippines and Colombia. They stress the linguistic differences between Spanish and English and teach the vocabulary that pupils need for their other school work.

Compensation or integration?

At Riverside, the University's education, sociology and psychology departments are cooperating with that city's school district in its swift, sweeping, and widely hailed, district-wide desegregation program, begun in September 1966.

The Riverside School Study is a joint project by the campus and the unified school district to study the educational effect of integration on all the children involved—Mexican-Americans, Negroes, Anglos. Special attention is given to the differences between Mexican-American children—whose parents first resisted integration—and Negro children—whose parents demanded the wholesale reshuffling of school populations rather than continued "compensatory" education programs in three *de facto* segregated schools.

The seven-year profile of the response of the child and his family to desegregation is based on preintegration interviews with a sample of eighteen hundred kindergarteners through sixth-graders and their parents. Annual checks on school performance and attitudes are being supplemented by interviews with teachers and children's friends. The review of the families' first year of experience with integration was completed in fall 1967.

Another aspect of the Study is an evaluation of in-service training which can prepare teachers and administrators for the new experience of teaching poor minority-group children. The study is financed by the Rockefeller Foundation, Regents' opportunity funds, and state compensatory education funds.

- In Oakland in 1966 the School of Education at Berkeley, the Oakland School Department and the Redevelopment Agency together concluded that the only way to integrate ghetto schools is to make them excellent, and make their neighborhoods at least average.

"There is no simple linkage between pupils' poor performance in school and any one of three variables—segregation, poor schools, poor environment," the team reported. "In order to widen the educational choices open to ghetto children, it will be necessary to change all three." Environmental changes required include housing, recreation areas, health services, and jobs.

The project was financed by state compensatory education funds and directed by T. Bentley Edwards, professor of education at Berkeley.

At present West Oakland's high school—McClymonds—and its two "feeder" junior highs and seven elementary schools are nearly 100 percent Negro and generally judged inferior academically when compared with predominantly white schools. Anything more than token integration appears to be years away. It won't come until all Oakland residents assume that the McClymonds area schools are equal or even better than others in the city, according to the report, "McClymonds: a Search for Environmental and Educational Excellence."

The program the project recommended to achieve high quality—and thus equality—in McClymonds is an educational park. It would combine all levels of schooling on one campus; or possibly make a campus for each level—elementary, junior high and senior high. The educational park would provide all its schools with central computer and television instruction, library, language and science labs, gymnasiums, humanities center, auditorium and theater, dining facilities, as well as services such as counseling, health, exceptional and compensatory education.

"The educational park is controversial," the report notes. "It questions the time-honored system of neighborhood schools. But it may be the only type of facility which can afford to experiment . . . in the manner necessary to solve the complexities of modern urban life and the problems of ghetto children."

A hybrid of the educational park also offers possibilities. The report suggested linking third, fourth and fifth grades with a junior high complex (sixth through eighth) in an educational park. This plan would leave preschool through second grades in neighborhood schools so that very small children start school close to home.

Public preschool education is vital, the report states, and suggests "cottage schools," enrolling two and three-year-olds all day, five days a week, in a home-like center providing meals, health checkups, parent counseling, enriched play and excursions, and intensive language training. Staff would include UC graduate students studying social welfare and preschool education.

Other McClymonds committee recommendations:

•• Secondary schools must start right away to provide far more practical options for students—vocational and business training that prepares graduates to meet beginner standards in available jobs, and academic preparation that puts Negro high school graduates on a par with whites in applying for college.

•• In elementary schools, the pupil should be free to explore educational interests outside the core curriculum; reading and math teaching should be strenghthened; influence of white middle-class symbols in curriculums, texts, and styles of teaching should be reduced.

Cultural disadvantage of the middle-class teacher . . . ?

Teaching the disadvantaged child is acknowledged to be the most difficult and most important job in education. But in tackling it, the average American teacher probably starts with disadvantages in training, experience or attitude.

The question of how middle-class attitudes, ingrained in the overwhelming majority of teachers, affect their abilities to teach lower-class minority youth is often raised. In his 1963 study of Oakland schools for the U. S. Commission on Civil Rights, UC-Berkeley Law Professor Ira M. Heyman paraphrased a pessimistic school principal:

"He sees the average teacher (including the Negro teacher) as authoritarian and inflexible, a person who demands conformity to middle-class codes of behavior and refuses to consider sympathetically the reasons for what appears to him as antisocial conduct on the part of Negro students . . ."

Nevertheless, those who succeed teaching lower-class pupils owe their success to practical classroom behavior more than to sympathetic attitudes. This was the conclusion of an Education-Criminology project, "Cultural Patterns of

Differentiated Youth," at Berkeley in 1963–64. For a year, researchers observed and questioned 40 East Bay teachers chosen for their success with disadvantaged students. They concluded these teachers did not have exceptionally enlightened attitudes about race, nor did their basic attitudes change significantly in the year's seminar discussions about new knowledge relating to race.

But if teachers are capable, practical, imaginative, objective, and genuine in facing the educational needs of their pupils, hostile attitudes of both teacher and students can recede. "Attitudes do not have to be changed prior to modification of actual behavior," the researchers stressed.

The project also reported that new findings from psychology, anthropology, and sociology can be used by working teachers only if they translate them into anecdotes describing actual classroom behavior.

There are two prerequisites to the teacher's ability to change his behavior: support from the school administration, and the teacher's understanding of the experiences which have shaped his pupils' attitudes toward schools.

"Workshops for re-training teachers in newly integrating schools are a good first effort," says Staten Webster, associate professor of education at Berkeley and veteran director of such workshops. "But the new ideas must be bought by the power structure of the schools. Teachers in these schools cannot change unless they have flexible administrators willing to change."

"Middle-classness" is not a cultural disadvantage to the teacher in a slum school if he goes there "not as a missionary but to acquaint himself with a wider part of the world," says Webster, and if he understands and accepts the natural, practical reasons why slum children behave differently from, say, suburban children.

In his observations about the disadvantaged boys in the UCLA Clinic School project, Seymour Feshbach stresses his belief that conflicts between these students and middle-class style schools do not occur mainly over differences in values—such as "academic attainment, loyalty, social status, honesty, concern for fellow man," but rather over differences in manners—for instance, the "tendency to resort to physical rather than verbal aggression when provoked, to avoid discussion or communication with teachers," to wear "deviant" clothes and to use profane language.

Whether it comes from values or manners, this isn't *ethnic* behavior, it's social-class behavior, Eugene McCreary, teacher education supervisor at Berkeley, tells young white middle-class student teachers. "And you don't need to get excited about it."

Nor do you need to get authoritarian about it, McCreary emphasizes. He is director of the faculty-originated Upward Bound Program to motivate and prepare disadvantaged high school students for college. "Authoritarianism is not the only attitude that works with these youngsters," McCreary has learned. "A teacher who is consistent can minimize punishment. You must know yourself, have confidence in yourself, be free of guilt about race. You must know what you want to do and how to do it. There is great danger in a white teacher relying on punishment in teaching Negro children. Using punishment across cultural lines makes the barriers greater." McCreary acknowledges that this is an issue that is controversial. "But it needs to be talked about."

These men and others responsible for teacher training in the University of California have found that accepting attitudes toward pupils cannot take the place of the teacher's command of subject matter and method. Thorough knowledge of subject, of the psychology of learning, and practice in superior classroom techniques are rated the foremost reasons for the success of UCLA's young white student teachers in the schools of Watts.

For working teachers, University Extension designs and sponsors evening courses, weekend and summer workshops in all parts of the state which help them to analyze their own teaching behavior and learn about the differences and disadvantages of lower-class minority children.

Language and intelligence

"Cultural disadvantage" has become the common euphemism for minority children's troubles in school, but many educators now maintain their main disadvantage is verbal not cultural. The disparity between the lower-class Negro child's dialect and the usage of the schools has been documented by Walter Loban, professor of education at Berkeley, in his thirteen-year research for the U. S. Office of Education on the spoken language of school children.

In a sub-study, Loban has counted and classified differences between the speech of Caucasian and Negro children, whose language he recorded from kindergarten through high school.

Comparing low-language-proficiency white children with similar Negro children, Loban found the Negroes' deviations from standard English enormously greater. But when he discounted those deviations which he identified as dialect, the groups were similar in performance. This means, Loban says, that dialect-speaking Negro children have to spend most of their energy overcoming deviations which white children never encounter. They must do this because "society exacts severe penalties of those who do not speak the prestige dialect."

Negro dialect has an adequate grammar, Loban found. It uses essentially the same sentence patterns as middle-class language. But it does not provide for elaboration of simple sentences with subordinate clauses, apposites, infinitives, and phrases.

Loban likens these findings to those of Basil Bernstein, who studied the language of Cockney youth in England and described it in terms of "rigidity of syntax . . . restricted use of the structural possibilities for sentence organization . . . condensed speech."

Bernstein found the language proficiency of Cockney youngsters much lower than their scores on a non-verbal intelligence test. Loban cites Bernstein as one authority for his own conviction that the linguistic differences between dialect-speaking Negro children and middle-class whites do not necessarily reflect differences in basic ability.

"I teach myself by talking to myself."

To educational psychologists a child's language is the visible top of an enormously significant iceberg: the underlying mental processes called "verbal mediation." Arthur R. Jensen, professor of educational psychology at Berkeley, defines them as "talking to yourself in relevant ways—usually below the level of awareness"—when you have to learn something, to solve a problem or to master a new concept.

At the Santa Barbara campus, Howard H. Kendler, professor of psychology, and his wife, Tracy, a research psychologist, have shown that this silent speech is the self-stimulator which is the most vital in problem-solving, developing in children from four to seven. To many psychologists it appears to be a function of the child's experience, which is changeable, not of his fixed inborn capacity.

Because the learning problems of many lower-class minority group children have been shown to stem from poor verbal mediation, Jensen describes them not as "culturally disadvantaged" but as "verbally underdeveloped."

Typically, these children have not experienced in their homes the attentive listening, talking-together, questioning-and-answering with parents, from babyhood on, that is exercise for minds just as vital as kicking, creeping, walking and running are for muscles. Jensen emphasizes that is not a lack of parental love and nurturing, but a differing pattern of family life.

In a study of verbal mediation ability in Mexican-American nine-year-olds from lower-class families, Jensen found that the children performed only at the level of white middle-class kindergarteners. But in tests which didn't depend on verbal mediation, the same Mexican-American children measured up to the fourth-grade level.

The primary handicap of these children was neither lack of ability nor that their family language was different from that used in the schools, Jensen stresses. Rather they had not learned vital verbal skills before they came to school. "Language serves not only . . . as a means of communication, but it is also of crucial importance as a tool of thought," Jensen explains.

In spite of its centrality, verbal mediation is not *the* learning agent. "No matter how ideal or verbally stimulating the learning environment, there is still a wide range of innate ability," says Jensen.

In research at the Institute of Human Learning, Jensen and William Rohwer, Jr., assistant professor of psychology, are pinpointing differences between lack of innate ability and lack of opportunity to develop learning tools. The studies are sponsored by the National Institute of Mental Health and the Office of Economic Opportunity.

Jensen and Rohwer have devised tests for "basic learning abilities," which they believe constitute "a psychologically more fundamental process" than intelligence. Their instruments depend very little on verbal mediational processes or specific transfer from previous learning. Tests which they administer to individual children in a laboratory include tasks of selective trial-and-error learning, free recall, serial and paired associate learning.

Giving these tests to several socio-economic groups and racial groups in Berkeley, Rohwer has found that middle-class children with low IQ's invariably are also poor learners on basic learning ability tests. But lower-class children with low IQ's may score anywhere from very low to very high in basic learning ability. "Many lower-class children in these experiments are for all practical purposes non-learners in the classroom," Jensen reports, "yet they were able to learn Rohwer's paired associates as rapidly on the average as do middle-class children."

While IQ correlates highly with basic learning ability tests in middle-class children, it correlates negligibly in lower-class children. And in the IQ range from 60 to 80, lower-class children are significantly superior in basic learning ability to middle-class children.

Jensen believes the reason for this discrepancy is that "raw learning ability is not directly converted to ability to learn in school." The successful student has many extra skills—"voluntary control of attention, perception of order, self-initiated rehearsal of newly acquired behavior, self-reinforcement for sucessful performance, habits of verbal mediation and a host of others."

"Intelligence is, in effect, a combination of basic learning abilities with opportunities to acquire knowledge and learning skills," Jensen writes. "What we need to know, and what many researchers are now seeking to find out, is how to transmute learning ability into the kind of intelligence needed for school achievement."

Jensen hypothesizes that basic learning ability depends on mental processes or structures which are very different from intelligence and which are more or less independently inherited. Once you discover basic learning ability, he believes it may be possible to develop intelligence through systematic private tutoring or teaching which focusses the attention of the learner, engages him and rewards his success.

"Public education must see to it that children who are neurologically sound and are capable of a normal rate of learning are in possession of the prerequisites for learning at every step of the way," Jensen writes . . . "If such children have a low educational ceiling for essentially the same reason that a person will fail calculus if he hasn't first learned algebra, the fault is with the conduct of the educational process and not with the child's basic equipment for learning."

- Can the educational process be amended so that poor children start first grade with less handicap? A UCLA project for the U. S. Office of Education measures how much help preschool language training can be.

In the Preschool Language Program, Evan R. Keislar, professor of educational psychology, and Carolyn Stern, research psychologist, are providing intensive language training to four- and five-year-olds in several Los Angeles day care centers. For two years they'll have daily 15-minute lessons in groups of four and five.

Using a variety of audio-visual teaching devices, the lessons present a kaleidoscope of attention-getting color, illustration, music, humor, stories, puppets, and other objects to manipulate. But their single aim is language: speaking, listening, and verbal mediation ability.

The project aims to bring these children six months ahead of a control group by the time they start first grade, and have them keep the advantage through the first year of school.

It is on this point of hanging on to their advantage that the sharpest criticisms of the preschool Headstart programs are made. Headstart merely helps disadvantaged children adjust to a school classroom setting . . . "and learning advantages seem to disappear in the first year or two." This was reputed to the State Committee on Public Education last year by Arthur Jensen, Alan Wilson, and David L. Elliott, the latter an assistant professor of education at Berkeley and head of the new graduate program there in early childhood education.

Headstart's weakness, believes Elliott, has been that the standard "well-rounded" nursery school doesn't fill in the gaps in the disadvantaged child's development. Well-roundedness for such children must include sharp-pointed emphasis on language functioning and tools of thinking, he says.

At UCLA, Mrs. Stern is directing a Headstart Evaluation and Research Office, one of 12 centers in the nation where the Office of Economic Opportunity seeks to see what effects various preschool programs have on different types of children. Since there are few dependable instruments for measuring the language ability of Headstart children, a first task of the UCLA office is developing and trying out new tests.

Among several other questions the office is studying are these: 1) When you train children to think by "talking to themselves," is their own dialect just as useful as standard English? 2) Can parents of Headstart children be given specific training in how to teach their children at home? Will such training increase the children's success in school?

Mixing a variety of teaching and a variety of youngsters, Peter B. Lenrow, assistant professor of psychology at Berkeley, in the summer of 1966 enrolled equal numbers of middle-class and poor children in each of three preschool classes at the Child Study Center of the Institute of Human Development. One program was like a parent-cooperative play school—lots of enrichment and little adult ordering. Two others were professionally staffed—one teacher for every five children—and structured. One systematically taught logical thinking; the other fostered inventiveness and self-expression with carefully organized but free-choice activities.

Now scattered in public school kindergartens, the children are still being observed for answers to questions such as these: Did either of the structured programs help disadvantaged children more than the well-rounded, free-play nursery? Did the highly directed teaching of how to think squelch some children's zest, creativity, and self-confident resourcefulness? Lenrow believes these "coping" qualities may be keenly needed by poor minority-group children as they encounter and explore the mainly middle-class territory of the school.

Making "No-Man's Land" produce

On the down-bound elevator, which has symbolized the disadvantaged student's school career, kindergarten has been the top; vocational education has been ground floor.

From this "educational no-man's land"—pervaded by the notion that "if the school failure can't work with his mind then obviously he can work with his hands"—the disadvantaged high school graduate has emerged to the "world of work" to discover he's still unfit to hold a job.

The description is from Melvin Barlow, professor of education at UCLA and director of the University's statewide Division of Vocational Education, which trains skilled craftsmen and technicians to be vocational-industrial teachers in junior colleges and high schools.

In 1963 the President's Panel on Vocational Education, headed by J. Chester Swanson, professor of education at Berkeley, found that nearly everywhere in the United States high school vocational courses were insufficient in variety and number of students enrolled, that most were "industrial arts" programs geared to locating vocational aptitudes rather than training students to find jobs after high school, that the majority of high school students in the nation don't go on to college, that businesses and industries are looking for workers but they have to be skilled, and that existing vocational courses do not anticipate technological advances which will make it necessary to retrain millions of American workers.

Since 1963 several new federal programs have supported research and tryouts of new ideas in vocational-industrial education. Barlow is now directing a new federal task force to assess the progress of these efforts. Swanson heads a nationwide evaluation of the vocational education staffs in state departments of education.

The new guidepost for industrial education has long been observed in most vocational-agricultural courses in California high schools. It is to select students "on the basis of individual aptitude and interest," Barlow says, "not academic inferiority." The old struggle between practical and liberal education—in which vocational education always came out second rate—is lessening, Barlow adds, because the ability for abstract thinking is becoming the key to both.

The very large investments which schools must make to provide modern vocational-industrial programs must be based on accurate knowledge of local labor markets. In the San Francisco area a five-year labor market analysis by the Institute of Industrial Relations at Berkeley is supported by the U. S. Office of Education. The project surveys employer policies and practices of 300 firms: recruitment, selection, on-the-job training, impact of technological changes on jobs. It is also observing patterns of the decentralization of industry, in which the new jobs are opening up outside of central cities.

These are only beginning efforts to close the gap between the academic high schools and the employers of high school graduates. Charles S. Benson, economist and professor of education at Berkeley, advocates more on-the-job training by industries themselves because he believes this is more effective than formal schooling for many young people. He calls for high school vocational education to be geared into such industry training and for federal tax credits for firms which provide such training for high schoolers.

Benson also urges what he calls a "tri-partite high school" with three alternative programs of equal academic quality—the present college prep in humanities and science, plus vocational-technical, plus the arts. Only such a system, he claims, can respect the individuality and provide equal opportunity to the "unbookish" student.

Such a system would not only require great difference in teaching styles, but great enlargement in size of some school districts. Vocational-technical education is so expensive that it can only be provided in quality in a school district large enough to use its highly specialized staff and equipment on a full-time, full classload basis, Benson says. He estimates a district serving 250,000 population could provide such a program efficiently.

"The 'comprehensive high school' holds a hallowed place in American education practice," Benson writes. "But it is not unfair to say that our secondary schools fail to serve about a third to a half of our youth, as measured by the proportion of students who express no commitment to learning in their last years of schooling. It is possible the comprehensive education is not a workable concept in our country at this time."

Schools for Outsiders

"Special high schools have great merit," agrees Glen H. Elder, Jr., research sociologist in the Institute of Human Development at Berkeley. "Our problem is how to provide them without creating levels of stigma. They must be designed so that the different systems are equal in quality, prestige and opportunities.... A special school must never be a 'terminal system' in itself."

From his study of continuation high schools throughout California for the Rosenberg Foundation, Elder has concluded that the continuation school is a well-established but undervalued demonstration of the benefits of special schools to large numbers of students.

As a school for failures in the comprehensive high school—parolees, pregnant girls, discipline problems—the continuation school has evolved an educational style which can accommodate individual differences in school preparation, family background, interest, aptitude and temperament. Since they deal with students for whom various forms of threat are largely useless, most continuation schools use a contract system in which the student and teacher work out an assignment and a date due, and the student proceeds at his own pace.

"This style has enormous benefits for many youngsters," Elder says, "because of its informality, chance for adult responsibility, lack of threat and escape from the pressure of continuous evaluation. It should be available to any person who wants this style of teaching, not just to outcasts."

Furthermore it is essential that this style be valued as an equal alternative, not a treatment. "If the continuation school is seen only as a hospital for sick kids it can perform only temporary cures," Elder believes. "Requiring the continuation school to send the student back to the regular high school when he's 'well' means relegating the continuation school to a very low grade and returning the student to the environment that triggered his 'illness'."

Elder believes the continuation school style is stronger than the attitudes of failure which students bring to the school and more pervasive than the atmosphere of physical neglect and impoverishment of its buildings—which are frequently, like the students, the outcasts of the school system.

In visits to continuation schools all over the state, Elder reports, he never observed either among students or teachers the depression, apathy and hostility that is a hallmark of ghetto high schools.

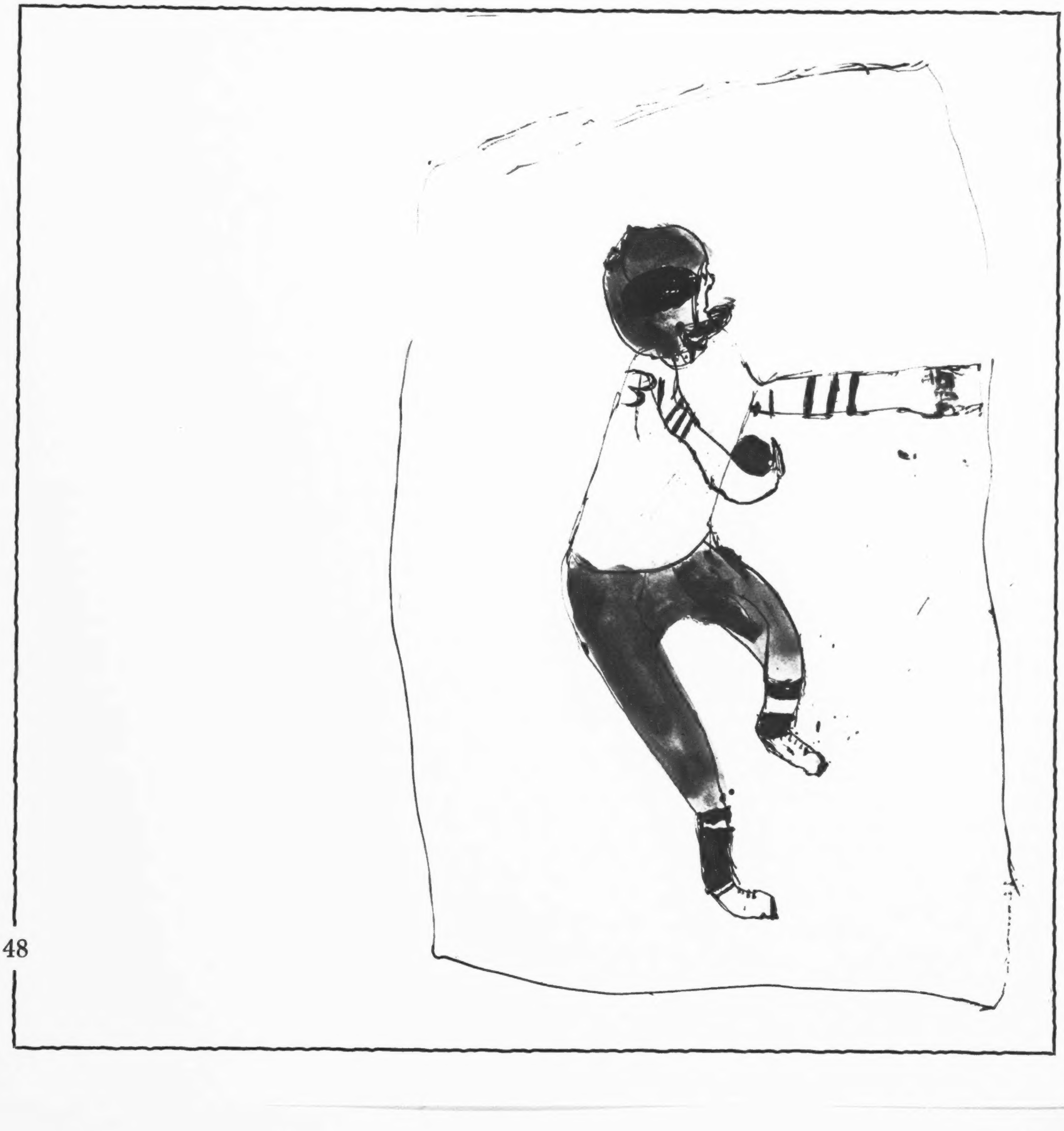
This appears to be confirmed by his survey of 50 graduates in 1965 from Richmond's continuation high school. One year after graduation these young men and women "held warm and positive feelings" toward their school, Elder reported. None had experienced that their diploma was worth less than any other high school diploma. No male graduates were unemployed—all were either in the armed forces, in junior college or working. To the question, "If you could do it over again, would you choose to go to Gompers or to a regular high school?" the overwhelming response was "Gompers."

Continuation schools need massive infusions of money—most have no libraries, science laboratories, vocational education, arts, music or athletics. But they also need experiments with new curriculums, new teaching methods, different ways of organizing, Elder says.

As they get these facilities, continue to attract highly qualified teachers and to cut class sizes, they must beware that they do not use their increased opportunity to give personal attention in a way that closely structures and supervises the pupils' work, Elder believes. "They must watch that the student does not lose control of the learning. Kids have to learn that they can control things and make things happen." The teacher's personal attention should instead be used to work with the student to develop higher academic standards, Elder says. Otherwise the new motivation will be wasted and the student will be disappointed and bored.

Elder believes the continuation school also provides the opportunity for developing an important educational resource—"cross-age relationships." In a study of McKinley Continuation High at Berkeley he observed that adults also attending the school to earn high school diplomas made possible a setting in which members of different age groups came together as equals and learned to understand each other. Both the young people and the adults considered that the lively exchange of views they experienced across the generation gap was a vital learning aid.

Elder adds that "continuous advances in technology create a need for public schools which welcome students of all ages to move back and forth between learning and working throughout their lifetimes."



Initiative

Since almost all the new ideas for teaching imply either stronger capabilities of teachers or a lower pupil-teacher ratio, or both, California institutions of higher education face a test of quality *and* quantity in teacher education. They are providing only about half the new teachers California schools hire each year. The University produces about 20 percent of each year's crop of California-educated teachers.

Teaching is the number one career choice—ahead of business, engineering and other professions—among today's college freshmen. In its 1966 survey of 207,000 freshmen, the American Council on Education found 21.7 percent considered elementary or secondary teaching their "most probable career." This is not only because of the great demand for teachers. Public opinion reporter Samuel Lubell reported in a 1966 nationwide campus survey that a significant and growing segment of college students want careers in which they could "work with people and ideas."

Thousands of these students already experience teaching as an outlet for their idealism and talent by volunteering to work as classroom aides and tutors. Exceptionally well-qualified students are entering teaching today, in part because of this idealism and volunteer experience, in part because of a resurgence of interest in teacher education by academic departments in colleges and universities.

The University's departments of teacher education strive to give such students classroom competence and confidence to match their strong motivation and fine academic background. First they must understand where they are needed most. "We must persuade students that the most intense need is for elementary teachers," says Irving Balow, chairman of Riverside's Department of Education. "The world is not necessarily eagerly looking for U C grads to teach accelerated courses in their own academic field at the twelfth-grade level. But new styles of teaching bring a challenge, an excitement and a chance to work in academic areas at the elementary level too."

"A good teacher affects eternity," writes James C. Stone, professor and head of teacher education at Berkeley. "We must choose them carefully and use them well."

Impact of internship

Starting in the mid-fifties UC's Berkeley, Los Angeles, Davis and Riverside campuses one by one joined a nationwide experiment in teacher education—internship.

In most places internships were designed to help solve the teacher shortage by giving on-the-job training to mature adults turning to teaching from other careers (including housewifery) and to college graduates who hadn't planned to teach. But the Davis campus from the start stressed internship's promise not for increasing numbers of teachers but for improving the quality and relevancy of their professional education.

Typically, internship involves a preparatory summer of teaching under supervision, college seminars and classroom observations, a school year of paid classroom teaching (with seminars and supervision from the school district and the sponsoring college) and a following summer of college course work. Successful interns earn a state teaching credential and continued employment in the district.

No longer an experiment at UC, internship is a full-fledged and expanding alternative method of teacher preparation. Davis now prepares as many teachers in its internship program (rated one of the best in the nation) as by its conventional program; Riverside prepares 70 percent of each year's teacher credential candidates by internship. At the new Irvine campus internship is the only form of teacher education offered.

In an evaluation of the first six classes of Berkeley interns, James Stone and Clark N. Robinson, leaders of the program, found that interns' reputation with their school principals and their staying power in teaching were "impressive."

In 1966 Stone evaluated all 42 internship experiments which the Ford Foundation had sponsored across the nation since 1951. He judged they had accomplished the basic goal: to inject into schools large numbers of the most sought-after kind of teacher—"the one with sound academic preparation, a mature commitment to teaching, and intensely practical professional preparation." But he found the bonus result—a radical transformation of traditional teacher-education—more significant.

The following effects of internship noted by Stone now are apparent in all UC teacher education:

1. All place classroom experience "at the core, not the culmination, of the curriculum."

2. Educational theory no longer is taught months or years in advance of "practice teaching," but in seminars taken concurrently with classroom teaching.

3. Schools of education are learning better ways to predict a student teacher's success in teaching.

4. Joint responsibilities for the student's learning on the job have opened up communication and cooperation between educators in the University and those in the public schools.

Santa Barbara's new elementary teacher education program is typical of the infusion of internship experiences into professional curriculums. Introduced in 1965, the program admits only students with a bachelor's degree. Teacher candidates start classroom teaching half-time in their second quarter, and teach full-time during their final quarter.

At Davis also the conventional credential program assigns two separate long-term classroom teaching assignments during the fifth year. Davis imports from a neighboring school district a "rotating supervisor" to join the Education faculty for one year and provide a public school point of view for faculty and students.

At UCLA the wholesale reform of teacher education during a five-year Ford Foundation study has resulted in offering varying degrees of internship. Each student's program is individually tailored, guided by performance tests and competency exams which may be taken in lieu of some courses. Depending on readiness to take full responsibility, UCLA student teachers begin full-time paid classroom teaching any time from the start of their fifth year to their final quarter.

An "experimental set"

The experience of teaching disadvantaged pupils is required in most student teaching programs. For instance, UCLA assigns all teacher candidates to teach in disadvantaged neighborhoods for one quarter, after an introductory quarter in intensive training in "privileged" public schools. Many of these students take jobs in slum neighborhoods after graduation. Student teachers (mostly young white girls) and their UCLA supervisors are major innovators of the Watts elementary schools. Berkeley Extension offers unique elementary and secondary internship programs designed for non-teachers who want to teach in slum schools.

The need for teachers to be experimenters and learners is the rationale for the new teacher education programs at UCLA. John D. McNeil, professor and head of teacher education, describes the new system of rating student performance as "a joint experimental study between supervisor and student instead of an apprenticeship situation."

"Subject matter is changing so fast we can no longer train in methods," McNeil explains. "We must train teaching as inquiry. We don't evaluate the teacher's process. We do evaluate the pupil's change. A teacher is only outstanding if he or she can formulate desirable changes for pupils and effect change, and if he or she herself can change in the face of failure."

Former rating scales by which the supervisor judged the student have been abandoned. Instead the student and supervisor together decide what they will accept as evidence of achievement in the pupil and thus of competency in the student-teacher.

Similarly, the student teacher is taught to test curriculum materials differently. Not, "Do I like it? Does the book say what I expect to read in ways I like?" Instead, "Does it do what it claims to do?"

Aides but not substitutes

Such a role for the teacher presupposes new people—and machines—in classrooms, who can free the teacher to do only the things he can do best. "Schools must find other people to do the tasks that keep the teacher from teaching," writes James Stone. "The best use of the new highly skilled teacher implies nongraded schools, automation, teaching machines, team teaching, teacher aides."

In this context programmed instruction and computer-assisted instruction are seen as an aid to the teacher, not a replacement.

Evan Keislar, UCLA professor of educational psychology, a pioneer in programmed instruction, values such devices as "a special kind of book." In a crowded classroom a teaching machine gives the child "a chance to engage in the cognitive process with the concentration that is required, and it allows him to learn something at his own level."

To critics who object that the machine is depersonalizing, Keislar replies, "Nobody feels that if a child sits down in a corner with a book for half an hour, he's being depersonalized."

Audio-visual devices are being investigated in all the University's teacher education departments. Television's most valuable use so far is in teacher preparation. It allows student teachers to observe classroom teaching without intruding (as at UCLA, where students observe University Elementary School). And videotape allows interns and student teachers to watch their own classroom performance, permitting analysis of teaching technique by students themselves as well as their supervisors.

Extension and Education Departments around the state provide courses in television teaching and production for school districts and for individual teachers. "But we discourage the extension of the lecturer by means of television," says Don Hatfield, supervisor of teacher education and director of the media center in Berkeley's School of Education.

"The teacher should use t.v. to provide experiences not otherwise possible—for instance, bringing science demonstrations or a native speaker of a foreign language in closeup to every student in the classroom. We don't feel that we have more than scratched the surface of the potential of television and videotape."

In the past three years Riverside Extension and neighboring school districts have been auditioning a motley group of housewives, high school and college students, school drop-outs and even grade school students for the role of nonprofessional teacher aide.

- James R. Hartley's and Dennie Briggs' Val Verde and Ontario projects in the summers of 1965 and 1966 proved the assistants "can be more than blackboard cleaners and orange juice passers," as Hartley put it. The projects were Office of Economic Opportunity "new careers for the poor" demonstrations carried on in a full elementary school program.

The Ontario project videotaped classroom teaching for daily after-school evaluation sessions. Both demonstrations stressed "sensitivity training"—groups of teachers and aides candidly discussing their teaching attitudes, experiences and problems.

Hartley, who is director of Riverside Extension, reported that because of their own background and school experiences some of the aides were more sensitive to pupils' learning and human relations problems than were the teachers. He found "cross-age teaching" to be beneficial to everyone—teachers, young pupils and older children who served as teacher aides. "Older children who teach somehow learn things they missed before, and they also feel much better because they have helped. Young children tend to be more highly motivated when someone near their own age works with them."

National evaluators of OEO teacher aide training projects judged the Riverside demonstrations to be the most successful in the nation in terms of "effective, cognitive and affective changes" which the training produced in both aides and professional teachers.

"The status position"

"The best ideas are of little avail," commented New York *Times'* education writer Fred M. Hechinger, "if the leadership cannot move the men in the field."

The University's leadership task, in harmony with the private universities in the state, is to invent and communicate ideas and also to supply leaders.

From their master's and doctor's degree programs UC schools of education send leaders into the public schools—educational researchers, curriculum directors and supervisors, specialists in exceptional and early childhood education, psychologists, counselors, principals and superintendents.

Doctoral candidates in educational administration today spend much of their preparation in business administration, political science, economics. The new ideas to tame bigness—systems analysis and program budgeting—are needed by schools as by government and industry. New graduate schools of administration at Irvine and Davis will prepare administrators for schools as well as managers for business, industry and government.

These are indications of the often confounding complexity of school administration and the need for much more interchange between the University and public schools. "The problems of public education are so complex that the day is gone when the guy in the status position intuitively makes a choice and goes on his way," says J. Cecil Parker, professor of education at Berkeley and head of its Educational Field Service Center.

For 11 years this Center has been a referral clinic for the school administrator. It has put him in touch with University faculty, library and graduate students for expert counsel in problems ranging from curriculum revision to school district finance to blueprinting a new junior college district.

Schoolmen and University professors hope that new mechanisms for cooperation—such as the federally financed "r. & d." laboratories, "title 3" curriculum centers and others still to be designed—will bring University and public schools educators into closer day-to-day communication. "We need more University people actually working in the schools, helping us transfer theories to classrooms," says Jerome Gilbert, principal of Berkeley's Columbus-University Laboratory School. "In times of change teachers must be learners, too."

"Evolving purpose" and "reducing risk"

Like clinical psychologists, counselors and psychologists in the schools have concentrated on helping children with problems in the sense of treating diseases. The University's new curriculums for these professions now emphasize trying to change the school practices which affect children adversely, and helping all children—not just youngsters in trouble—take control of their own decision-making.

- "We aim to help students become agents in planning more of their own education—and later lives—by encouraging them to evolve their own purpose rather than accepting values and performing tasks set by others," writes Frank L. Field, assistant professor of education and coordinator of counselor education at Santa Barbara. "Young people could gradually come to understand much of the data on which we currently base the decisions we make for them. More important, they also tend to become aware of far more data about themselves than we can ever know. Consequently, with help—probably with no more than fuller permission from us—they could eventually become better at planning their lives than we are. Unfortunately, much traditional guidance practice is based upon the assumption that young people can *not* learn to decide for themselves."

Counselors must turn more attention to youngsters who aren't in trouble, believes Lawrence H. Stewart, professor of education and coordinator of counseling psychology at Berkeley. The children of our "ambiguous, ambivalent, changing culture" deserve help in finding guidelines for their lives. "We must tell high school girls about the confusions in roles they will face; the difficulties of progressing in a career and handling marriage and motherhood at the same time. We have to tell boys how to train for as many as three different jobs in their lifetime before an early retirement."

But counselors must increasingly work outside the schools, too, Stewart believes. "If we have to deal only with the schools we might as well give up. Too many other factors are influencing school children. We must interpret youngsters' behavior to parents and those leaders who make community policy and decisions—school boards, boards of supervisors, judges. We must say to them, in effect, 'Look what you're doing to kids!' And in many ways we must do this more for upper-status youngsters than for the disadvantaged. Youth today needs standards and guideposts more than any previous generation, in the face of such rapid change. But upper-class youngsters are finding that the more they push, the more standards bend for them. With disastrous results."

- Professional preparation for school psychologists is changing under the influence of the new idea that the intellectual potential of children is not fixed but changeable.

At Berkeley, Nadine Lambert, assistant professor of education, has designed a new four-year doctorate program and widened the focus of the two-year psychologist credential program beyond "special rescue efforts" for potential dropouts and deliquents, and those certified for special education programs. Now school psychologists also will analyze schoolwide educational procedures in order to find how to "reduce the stress upon children vulnerable to school failure."

"Psychologists will have to find methods for early identification and educational intervention for risk populations," Mrs. Lambert believes, "rather than wait until the probability of the risk has become a certainty."

To this end, field work which accompanies preparation places the student psychologist in classrooms of every grade to work as a teacher aide for extended periods. The aide will discover, for instance, that midway through fall term five first-graders already are failing in arithmetic. They have not grasped the first concept introduced. The student will look for the reasons for failure, asking himself: "Are some of the failures 'disadvantaged,' retarded? Do they have the prerequisite learning skills for these tasks? What stress prevents them from learning?" The student psychologist and the teacher will try to determine what can be done about it—not three years from now, or at the point of dropping out of school, but now.

Public schools as government

Changes in what we know, how we live, and what we strive for uproot old-fashioned curriculums and rejuvenate teachers. They also shake up some venerable traditions about the governance and finance of public schools.

The need for change tests schools' powers and flexibility not only as professional organizations but as governmental units.

- Recognizing the political issues in education, Davis political scientist John F. Gallagher has documented the increasing and, he thinks, potentially antidemocratic transfer of decision making from elected school board members to appointed superintendents. And he has analyzed the "intense involvement" of formerly apolitical school people in legislative matters, with the rise of political issues such as school unification.

- Actually, school unification *versus* local control is a "non-issue," maintains Marvin C. Alkin, assistant professor of educational administration at UCLA, because local control and interest in schools is not necessarily influenced any longer by the size of the district.

"To a great extent it is not true in California," writes Alkin, "... that non-unified school districts represent identifiable communities with set patterns of community feelings and a high level of interest in the schools ... Moreover, with the continuing metropolitanization of California and the existence of news media which focus on metropolitan problems it will be increasingly more difficult to identify 'communities.' "

The true issue is whether unified districts are more efficient than separate elementary and secondary districts, Alkin believes. But available evidence is "sparse and inconclusive." And the question is not so much simply one of unification but rather of determining economically optimum-sized districts. It may be economical to reorganize or unify small school districts, but at some point these economies may cease to exist. Educational costs alone must not be considered as the measure of efficiency. Student achievement and well-being must be calculated too.

- More state control over school financing is necessary in order to improve the quality of education in the United States, believes Charles S. Benson, economist and professor of education at Berkeley.

Local autonomy means that some districts spend generously per pupil, others stingily. This means differences in quality of teachers, in class sizes, in school facilities and auxiliary services. Rich communities are able to provide better schooling at quite low tax rates: Beverly Hills school taxes, for instance, are 27 percent lower than those of any other authority in Los Angeles County.

"We have a set of elementary and secondary schools so markedly different ... from poor towns to rich," writes Benson, "that some of them can only be described as private institutions which somehow manage to draw their support from public taxes. A poor man has as much chance of removing his children from the hideously inadequate schools of his own area and placing them in the well-staffed, generously provisioned institutions of the rich man's town as he does of crashing the golf club marked 'for members only.'

"The concern with inequalities of opportunity has reached the headlines across the lands. It is now a good liberal position to support programs to improve slum schools.... But this implies a Peace Corps attitude toward our fellow citizens, many of whom ... pay a higher proportion of their household incomes for education than do the liberal spokesmen for urban-school betterment. What the confident liberal might better do is push for such controls of local educational expenditure that our economically favored districts can no longer ... command an undue proportion of educational resources for the exclusive benefit of their resident pupils."

Benson calls for state salary schedules for teachers, state standards of staffing adequacy and school construction, changes in state subventions to the schools and in local property taxes. He also maintains the minimum size of school districts should be around 250,000 pupils. He says only districts of this size or larger can offer efficient utilization of scarce or expensive resources and provide for the improvement of vocational and technical education, which he regards as essential, as well as for in-service education of teachers.

Benson believes school administrators need more help from local government in such skills as program and performance budgeting and personnel classification. School district and local governments are inescapably dependent on each other, he writes. "The cities feed environmentally handicapped children into the schools and the schools feed uneducated young adults back into the cities . . . lifelong economic liabilities. . . . High welfare costs make it financially difficult for the cities to provide those very public amenities that could serve to reduce the number of environmentally handicapped children"—better housing, open green spaces, libraries, youth centers, cultural programs, and cheap urban public transportation.

- Local schools must find more money without giving up essential decision making. This is the dilemma in the emerging partnership between local, state and federal government seen by Erick Lindman, UCLA professor of educational administration.

Each partner has inherent limitations and strengths in its abilities to provide for public education, Lindman writes. Local school boards are close to communities so that decisions can democratically reflect local children's unique needs. But their resources are increasingly limited in the face of great new demands on schools.

State government has fundamental legal responsibility for education, independent from federal government, and broad taxing powers. But the exercise of that independence plus differences in states' taxable resources lead to inevitable inequalities of educational opportunity among the states.

Federal government brings a national point of view, a more efficient way to finance research and development and vastly greater revenue potential. But it is so far removed from the classroom that it often fails to recognize differences in needs in different communities, and "its action in the field of education has been incidental to other federal concerns—national defense, full employment or elimination of poverty."

Wise assignment of responsibilities so that "the special strength of each level of government is fully utilized and its inherent weaknesses compensated for [is] the problem in educational government which must be solved before American public schools can reach their full potential."

Lindman calls for increased federal payments not to strengthen federally selected school subjects but to compensate for deficiencies in the local tax base, and thus to vitalize America's unique decentralized public school system.

"American schools have come through a decade of tremendous change," observes Theodore L. Reller, dean of the School of Education at Berkeley. "There is every reason to believe that during the next one they will change even more. Federal influence and stimulation in the form of funds is profound. But decisions of what we build with it belong significantly with the leaders of local schools." The shapes of the emerging educational systems—elegant or clumsy, functional or bungling—will be clear expressions of the commitment, competency and creativity of the professional leaders of the schools. Since the University accepts a unique responsibility for the preparation of and continuing partnership with that leadership, the new designs for the little red schoolhouse will also be a test of the University's originality, ability to experiment, and to communicate what we've learned.

Can schools be good enough for our kind of world? *This is still an investigation without final findings. But the question itself—combining as it does scholarly research, professional preparation and service to the community—expresses the essence of the University.*

HE

He oh he, reaching the age of
infinite.
His ears are wrinkling away.
Sitting on a rocking chair of half
rotten wood he rocks slowly with the
wind.
His mental steps are broken into nothing
Creaking and groaning he waits until
disintegration.
Oh, what a house, Oh what a house!

Haiku

I came from Bigs-ville
where all the clean
cats go now.
My square daddy
is there.

Lace a race

Lace a race
aroand some
violets in a vaese,
that is so neat,
o so neat!
it looks liksome
candy
that is so sweet.

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